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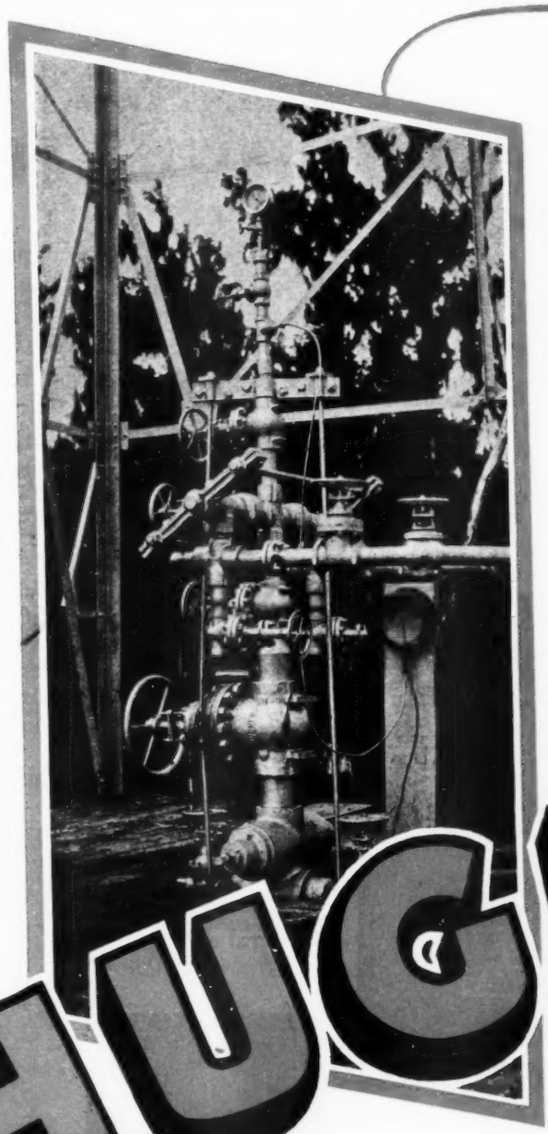

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Advertisers' Index on Page 25 Table of Contents on Page 26

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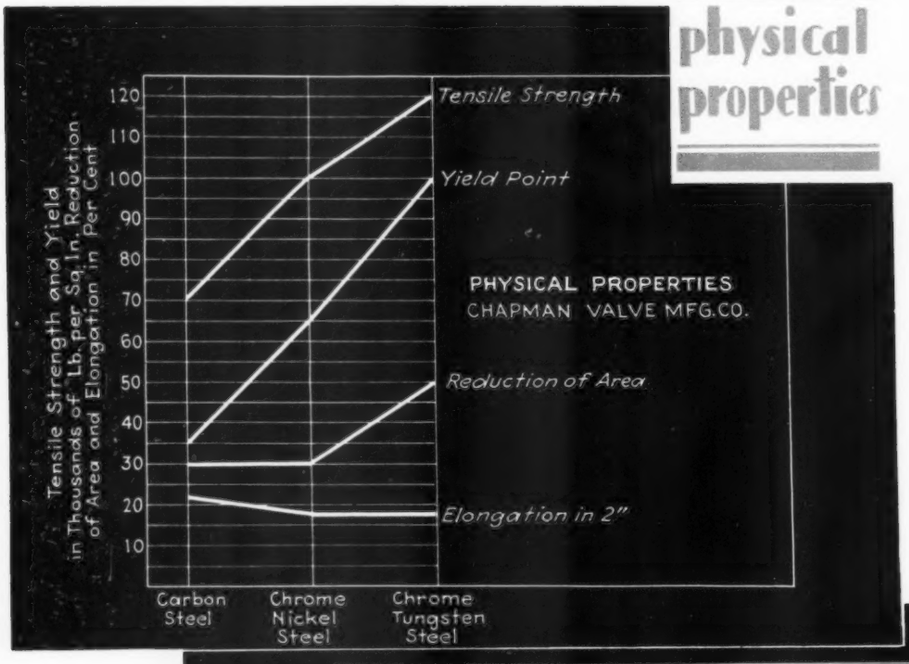

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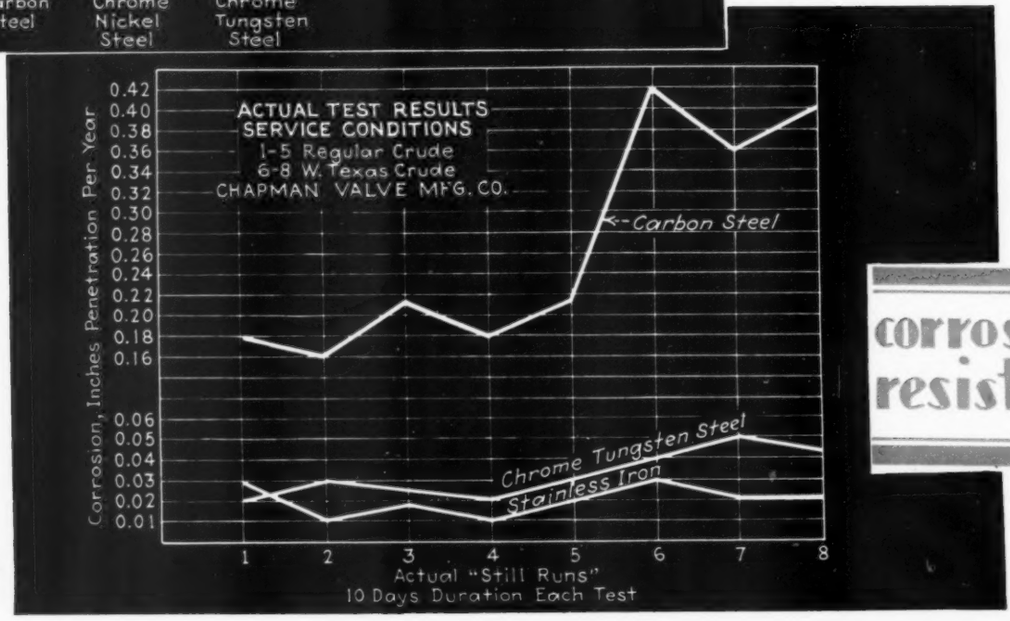

The ADVERTISERS' INDEX

A

Acme Fishing Tool Co.
Air Preheater Corp., The
Ajax Iron Works
Alco Oil Tools Co., Inc.
Allegheny Steel Co.
Allen Corp., The
Alling Blue Print Co.
Allis-Chalmers Mfg. Co.
Allsteel Products Mfg. Co., Inc., The
Aluminum Co. of America 8
American Askania Corp.
American Assn. of Petroleum Geologists 150
American Cable Co., Inc.
American Cast Iron Pipe Co.
American Iron & Machine Works Co.
American La France & Foamite Corp. 24
American Meter Co. 65
American Radiator Co.
American Rolling Mill Co., The
American Schaeffer & Budenburg Corp.
American Sheet & Tin Plate Co. 91
American Stainless Steel Co.
American Steel & Wire Co.
American Steel Works
American Tank & Equipment Corp.
American Telephone & Telegraph Co.
American Well Works, The 153
Anchor Post Fence Co.
Armstrong Brothers Tool Co. 159
Armstrong Machine Works
Athey Truss Wheel Co. 150
Automotive Distillate Corp.
Axelson Mfg. Co., Ltd. 83
Ayer & Lord Tie Co.

B

Baash-Ross Tool Co. 18
Badger, E. B., & Sons Co.
Badgett Steam Lubricator Co.
Baker Oil Tools, Inc. 2
Baldwin-Duckworth Chain Corp.
Barber-Greene Co.
Barco Mfg. Co.
Barnes Mfg. Co., The
Barnickel, Wm. S., & Co.
Barnsdall Refineries, Inc.
Barrett Co., The
Bartlett Hayward Co., The 109
Bart Products Co.
Beaumont Iron Works Co., The
Benson & Henderson Pipe Line Construction Co.
Bessemer Engine Co. 68-69
Bethlehem Steel Co.
Bigelow-Liptak Corp.
Bignall & Keeler Machine Works 4
Blackor Co.
Black, Sivalls & Bryson, Inc.
Black Wire Rope Co.
Bosch, Robert, Magneto, Inc.
Braun, C. F., & Co.
Brewster Co., Inc., The
Bridgeport Machine Co.
Bristol Co., The
Broderick & Bascom Rope Co.
Broderick Co., The
Brown, Arthur C. 154
Brown Instrument Co.
Buckeye-Traction Ditcher Co.
Buda Engine Service Co. of Tulsa
Burford Oil Co.
Butler Mfg. Co.
Byers Machine Co.
Byron Jackson Co. Back Cover

C

California Talc Co.
Cameron Iron Works, Inc.
Campbell Co., J. A.
Caterpillar Tractor Co.
Central Alloy Steel Corp.
Central Tube Co.
Chain Belt Co.
Champion & Barber, Inc.
Chaplin-Fulton Mfg. Co., The 145
Chapman Valve Mfg. Co., The
Inside Front Cover
Chicago Bridge & Iron Works
Chicago Pneumatic Tool Co.
Cincinnati Advertising Products Co., The
Clark Brothers Co. 58-59
Classified Wants 116-117
Cleveland Trencher Co., The
Climax Engineering Co.
Colona Mfg. Co.
Columbian Rope Co.
Columbian Steel Tank
Columbus Forge & Iron Co., The
Consolidated Ashcroft Hancock Co., Inc.
Continental Equipment Co.
Continental Supply Co., The 49
Cooper, Bernard
Cooper-Bessemer Corp., The 68-69
Cooper, C. & G., Co., The 68-69
Coppus Engineering Corp.
Corona Silica, Inc.
Crane Co.

D

D. & B. Pump & Supply Co.
Darling Valve & Mfg. Co. 9
Dart, E. M., Mfg. Co. 159
Davis Regulator Co.
Dayton-Dowd
Dayton Rubber Mfg. Co., The
Dearborn Chemical Co.
Deep Rock Oil Corp.
DeSoto Foundry
Devine Mfg. Co., Inc., J. P.
Dixon Crucible Co., Joseph
Dodge Brothers Corp.
Doheny Stone Drill Co.
Donovan Boiler Works, Inc.
Dow Chemical Co., The
Drane-Humphrey Co., Inc.

D

Dresser & Gorton, Inc.
Dresser, S. R., Mfg. Co. 37
Driftmeter, Inc.
Dunn Brothers
Du Pont de Nemours & Co., Inc., E. I.

E

Eagle-Picher Lead Co.
Economy Pump & Oil Tool Co., The 146
Edeleanu Co., Ltd.
Edward Valve & Mfg. Co., The
Elliott Mfg. Co.
Electric Machinery Mfg. Co.
Empire Oil & Refining Co.
Emsco Derrick & Equipment Co.
Engineers Aerial Surveys
Ethyl Gasoline Corp.
Exchange Banks of Tulsa 108

F

Falk Corp., The
Fenwick-Reddaway Mfg. Co. 150
First National Bank & Trust Co., The
First National Bank & Trust Co. of Oklahoma City, The
Fisher Governor Co.
Fluor Corp., Ltd.
Fort Worth Chamber of Commerce 144
Foster Wheeler Corp.
Foote Bros. Gear & Machine Co.
Four-Wheel Drive Auto Co., The
Foxboro Co., Inc., The
Franklin Valveless Engine Co.
Freeman Mfg. Co.
Frick-Reid Supply Corp.

G

Gardner-Denver Co.
Garlock Packing Co., The
Gaso Pump & Burner Mfg. Co.
Inside Back Cover
General Electric Co.
General Mfg. Co., The
General Paint Corp. 15
Gilbert & Barker Mfg. Co. 42
Globe Oil Tools Co.
Goodrich, B. F., Rubber Co., The
Goodyear Tire & Rubber Co.
Gott, H. P., Mfg. Co., Inc.
Goulds Pumps, Inc.
Granger Indicator Co.
Granite City Steel Co.
Grant Oil Tool Co.
Graver Corp.
Gray Processes Corp., The 6
Grinnell Co., Inc.
Griscom-Russell Co., The 123
Guiberson Corp., The 14
Gulf Refining Co.

H

Halliburton Oil Well Cementing Co. 87
Hamer Oil Tool Co., Ltd.
Hanlon-Waters, Inc. 47
Harrisburg Pipe & Pipe Bending Co.
Haynes Stellite Co.
Hazard Wire Rope Co.
Headley Emulsified Product Co.
Heat Transfer Products, Inc.
Hedges-Walsh-Weidner Co., The 141
Heeter, Sons & Co., Inc., C. M.
Hercules Motors Corp.
Hercules Supply Co.
Hercules Tool Co.
Hewitt-Gutta Percha Co.
Heydrick Mapping Co. 159
Hill, Hubbell & Co.
Hills-McCanna Co.
Hood, H. H.
Hope Engineering Co.
Hopper Machine Works, Inc. 113
Hough, Charles N., Mfg. Co., The
Hughes Tool Co. 73-Front Cover
Humble Oil & Refining Co.
Hyatt Roller Bearing Co.

I

Imperial Belting Co.
Imperial Royalties Co. 150
Improved Steel Gas Engine Head Co.
Ingersoll-Rand Co.
International Derrick & Equipment Co., The 80-81
International Harvester Co. of America
International Nickel Co., Inc., The
International Supply Co.

J

Jackson Co., Byron Back Cover
Jackson Engineering Corp.
Jacobson Commissary Co.
Jarecki Mfg. Co.
Jenkins Brothers
Jerguson Gage & Valve Co.
Jones & Laughlin Steel Corp.
Jones, The S. M., Co.

K

Kaw Steel Construction Co.
Kellogg, M. W., Co., The 150
Kelly, John Eoghan
Kennedy Valve Mfg. Co., The 145
Kerotest Mfg. Co.
Key Boiler Equipment Co.
Kingham Trailer Co., Inc.
Kirk-Morrow Iron Works, Inc.
Kohler Co. 140
Koppers Co., The

L

Landis Machine Co., Inc. 3
Larkin Packer Co.
Layne & Bowler Co.
Leader Iron Works, Inc.
Lees-Bradner Co.
Lemons, Inc., Henry L.
Leonard Construction Co.
Leschen, A., & Sons Rope Co.
Limbert & Co., Geo. B. 159
Lincoln Electric Co. 5
Linde Air Products Co.
Link Belt Co.
Longyear, E. J., Co.
Lucey Products Corp.
Ludlow Valve Mfg. Co.
Lufkin Foundry & Machine Co., The
Lufkin Rule Co.
Lummus, The Walter E., Co.
Lunkenheimer Co., The

Mc

McAlear Mfg. Co., The
McClintic-Marshall Co.
McCord Radiator & Mfg. Co.
McEverlast, Inc.
McEvoy, J. H., & Co.
McEwan, A. J., & Co. 141
McIntosh & Seymour Corp.
McKee, Arthur G., & Co.

M

MacClatchie Mfg. Co. 148
Macwhyte Co.
Magnolia Petroleum Co.
Mair, D. S., Machinery Corp.
Maloney Tank Mfg. Co. 112
Marion Machine Foundry & Supply Co.
Marsh Gauge Pole Co.
Martin-Decker Corp.
Mason Regulator Co.
Merco Nordstrom Valve Co. 143
Meriam Co., The
Metric Metal Works 65
Michigan Valve & Foundry Co.
Midwest Piping & Supply Co., Inc.
Miller Sand Pump Co.
Moon Mfg. Co., The
Moore, Lee C., & Co., Inc. 57
Morris, I. P., & De La Vergne, Inc.
Muller Co., The Jno.
Munn & Co. 159
Murray Tool & Supply Co.

N

National Equipment Corp.
National Lead Co.
National Supply Co. 57
National Tank Co.
National Tank Seal Co.
National Transit Pump & Machine Co. 41
National Tube Co. 24
Natural Gas Equipment Co.
Naylor Pipe Co. 12
Neilan Co., Ltd.
Nitrose Co., The 7
North American Car Corp.
Northwest Engineering Co. 77

O

Oakite Products, Inc. 145
O'Brien Steel Construction Co.
Ohio Injector Co., The
Oil Conservation Engineering Co., The
Oil Countries Specialties Mfg. Co., The
Oil and Gas Journal, The 151
Oil Well Improvements Co. 93
Oil Well Supply Co. 13
Oklahoma City Chamber of Commerce
Oklahoma Contracting Co.
Oklahoma Gas & Electric Co.
Ottumwa Iron Works
Oxweld Acetylene Co.

P

Panyity, L. S.
Parkersburg Machine Co. 102
Parkersburg Rig & Reel Co., The 84-85
Patrick, R. S.
Patterson-Ballagh Corp. 147
Pattin Bros. Co.
Penberthy Injector Co. 39
Petroleum Engineering, Inc.
Petroleum Equipment Co.
Petroleum Iron Works Co.
Pforzheimer, Carl H., & Co.
Phillips Petroleum Co.
Pittsburgh-Des Moines Steel Co.
Pittsburgh Equitable Meter Co. 79
Pittsburgh Screw & Bolt Corp.
Pittsburgh Steel Products Co. 19
Pomona Pump Co. 92
Powell, William, Co.
Power Piping Co.
Prescott Co., The 43
Pressed Steel Car Co.
Prest-O-Lite Co., Inc., The
Public Service Co.
Pure Oil Co., The 149
Pyle-National Co., The

R

Reading Iron Co.
Reading Steel Casting Co., Inc.
Reed Roller Bit Co. 71
Regan Forge & Engineering Co. 103
Reid, Joseph, Gas Engine Co.
Republic Steel Corp. 137
Republic Supply Co. 45
Robinson Orifice Fittings Co.
Ross-Meehan Foundries Co. 159

S

Safety Gas Main Stopper Co. 150
St. Louis Cordage Mills
Scandinavian Belting Co.
Schramm, Inc.
Sears Map & Blue Print Co.
Shaffer Tool Works
Shaw, S. P.
Sheldon Machinery Corp.
Sherwin-Williams Co. 139
Sinclair Refining Co. 127
Sivyer Steel Casting Co.
Skelly Oil Co.
Smith, A. O., Corp. 10-11
Smith Co., E. M.
Smith Separator Co.
Smooth-On Mfg. Co. 141
Soph, Edward
South Chester Tube Co. 22
Southern Cornice Works 159
Southwestern Engineering Corp. 35
Sowers Manufacturing Co.
Spang & Co.
Spang, Chalfant & Co., Inc.
Spencer Trailer Co.
Spengler Tool Co. 65
Sperry-Sun Well Surveying Co.
Stacey Engineering Co., The 152
Star Drilling Machine Co.
Steiner, George
Sterling Steel Casting Co.
Stockham Pipe & Fittings Co.
Stoody Co.
Stork Engineering Co.
Strong, Carlisle & Hammond Co., The
Strong Oil Tool Co.
Sullivan Co., The
Sullivan Machinery Co.
Sun Shipbuilding & Drydock Co. 16
Superheater Co., The
Sureshot Torpedo Co.
Swedish-American Prospecting Co.
Swindell-Dressler Corp. 153

T

Tagliabue, C. J., Mfg. Co.
Taubman Supply Corp.
Taylor Instrument Companies
Templeton, Kenly & Co., Ltd.
Texas Electric Service
Thompson, J. D., Jr.
Timken Roller Bearing Co., The 83
Titusville Iron Works Co.
Toledo Pipe Threading Machine Co., The 141
Trackson Co.
Trimont Mfg. Co. 95
Truscon Steel Co. 94
Tube Turns, Inc. 52-53
Tulsa Boiler & Machinery Co.
Tulsa Chamber of Commerce
Tulsa Sheet Metal Co.
Twin Disc Clutch Co.

U

Union Carbide & Carbon Corp.
U. S. Electrical Mfg. Co.
Union Wire Rope Co.
United Engineers & Constructors, Inc.
Universal Oil Products Co. 74-75
Utility Trailer Mfg. Co.

V

Vacuum Oil Co.
Vellumoid Co., The
Vez Co., The
Vickers Machine Co.
Victaulic Co. of America
Victor Balata & Textile Belting Co.
Victor Welding Equipment Co.
Vogel, Felix A.
Vogt, Henry, Machine Co. 96
Von Gemmingen, W. A. 153

W

Wagner Electric Corp.
Wailes, Dove-Hermiston Corp.
Wall Rope Works, Inc.
Walworth Co. 1
Warren Petroleum Co.
Washburne, Chester W. 153
Waukesha Motor Co. 21
Westco-Chippewa Pump Co.
Westcott Valve Co.
Western Gas Construction Co., The
Westinghouse Electric & Mfg. Co., The
West Texas Utilities Co.
Whealton & Townsend, Inc., Ltd.
White Co., The
Wickwire Spencer Steel Co. 20
Wico Electric Co.
Williams Bros., Inc.
Williamsport Wire Rope Co.
Wilson-Snyder Mfg. Corp.
Wilson Welder & Metals Co., The
Winkler-Koch Engineering Co., The
W.K.M Co., The
Wood Shovel & Tool Co., The
Worthington Pump & Machy. Corp.
Wright Machine Co., Inc., The
Wright Manufacturing Co.
Wyatt Metal & Boiler Works

Y

Yale & Towne Mfg. Co.
Young Engine Corp.
Youngstown Sheet & Tube Co., The 17

Z

Zink, John

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Table of Contents

SPECIAL ARTICLES

Production Must Be Curtailed Further 27
By Andrew M. Rowley
Situation in 1931 dependent upon what producers and refiners do between now and April 1 next year.

Industry Views Its Problems Seriously 29
By Andrew M. Rowley
Feature of Institute was spirit of co-operation. Open meeting beneficial.

Line From Iraq Field to Be Built 29

Economic Problems of Unitization 30
By T. E. Swigart
Engineering aspects of practical application of unit operation.

Refinery Operators Discuss Problems 31
By W. T. Ziegenhain
Use of acoustimeter, interpretation of distillation curve and hydrogenation features.

Frankly Discuss Code Weaknesses 31
By W. T. Ziegenhain
Marketers recognize inequalities but to perfect agreement.

Report Shows What Industry Must Do 32-33
Institute's committee recommends 8.2 per cent reduction in refinery runs.

Engineers in Accord on Major Problems 34
By L. G. E. Bignell
Work of Institute committees and papers indicate progress.

Working Together (Editorial) 36

Study Chemistry of Organic Sulphur 38
By H. S. Taylor
Catalytic reactions of compounds outlined.

List of Officers and Committees, A.P.I. 40

Pipe Line Construction News 62

Busy Men Caught by Journal's Camera 76

Field Problems and Their Solution 88
Edited by Thomas F. Smiley

Motor Transportation of Products 92
By A. F. Coleman

FIELD OPERATIONS

Late Fields 40

Oklahoma 42
By W. A. Spinney

Kansas 44
By W. A. Spinney

North Louisiana-Arkansas 46
By D. H. Bancroft

Southwest Texas 48
By B. D. Stevenson

Gulf Coast 50
By Neil Williams

Rocky Mountain Area 51
By Tolbert R. Ingram

Eastern Fields 51
By Staff Correspondent

California 54
By L. P. Stockman

Michigan 55
By Paul A. Elliott

West Texas 60-144
By L. E. Bredberg

North Texas and Panhandle 61-144
By L. E. Bredberg

Central West 66
By George A. Whitney

Kentucky 66
By George A. Whitney

Canada 70
By Victor Lauriston

East Central Texas 134
By L. E. Bredberg

REFINING AND MARKETING

Natural Gasoline the One Bright Spot 28
By W. T. Ziegenhain
Lubricants and heavy oils driven to lower levels in Oklahoma refinery market and gasoline prices remain weak.

Technical Questions Answered 90
By Dr. C. K. Francis

Chicago Spot Market More Active 118
By J. B. Waldo

Eastern Refiners Considering 1931 119
By A. E. Mockler

Natural Gasoline Manufacture 121

Brief Items for Petroleum Refiners 122

Refinery and Crude Prices 124-125

Tank Wagon Quotations 126

Of Interest to Sales Departments 138

ARTICLES OF GENERAL INTEREST

The Advertisers' Index 25

Personal Paragraphs About Oil Men 72

Natural Gas Developments 78

Equipment and Supplies 82-86

Classified Want Advertisements 116-117

Oil Securities Market 128-129

Field Operations in October 152

Crude Petroleum Statistics 160

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Refinery Section Starts on Page 118

Production Must Be Curtailed Further

Highest daily average estimated total production in 1929, week ended Aug. 24, 2,975,435 bbls. Lowest in 1929, Dec. 27, 2,595,320 bbls.

Situation in 1931 Dependent Upon What Producers and Refiners Do Between Now and April 1 Next Year

Highest daily average estimated light oil production in 1929, week ended Sept. 14, 2,534,524 bbls. Lowest in 1929, Apr. 13, 2 142,036 bbls.

By Andrew M. Rowley

Although crude oil production in the United States is at the lowest point reached in more than four years, the industry must further curtail its output by 72,500 barrels daily in order to conform to the figure recommended by the committee on economics of the American Petroleum Institute. This report has been endorsed and referred to the industry as a guide to its operations between now and April 1 next. Such further reduction in production, urged after producers had so materially limited their output, serves to emphasize the emergency confronting the industry and the necessity of a greater tightening of the lines in the main producing areas of Oklahoma, Texas and California.

Such curtailment to be effective and to achieve beneficial results must be accompanied by a reduction of 8.2 per cent in refinery runs during the six months from October 1 of this year until April 1, 1931. Producers of the United States have shown their willingness to do their part and have accomplished all that has been asked of them thus far. It is felt they will continue their co-operation and that crude oil production will be reduced to the lower figure recommended. But the producers expect, and rightly, that refiners of the country will immediately adjust their operations to the lower schedule of runs to stills and that gasoline stocks will be held to a level of 40,000,000 barrels by April 1 next.

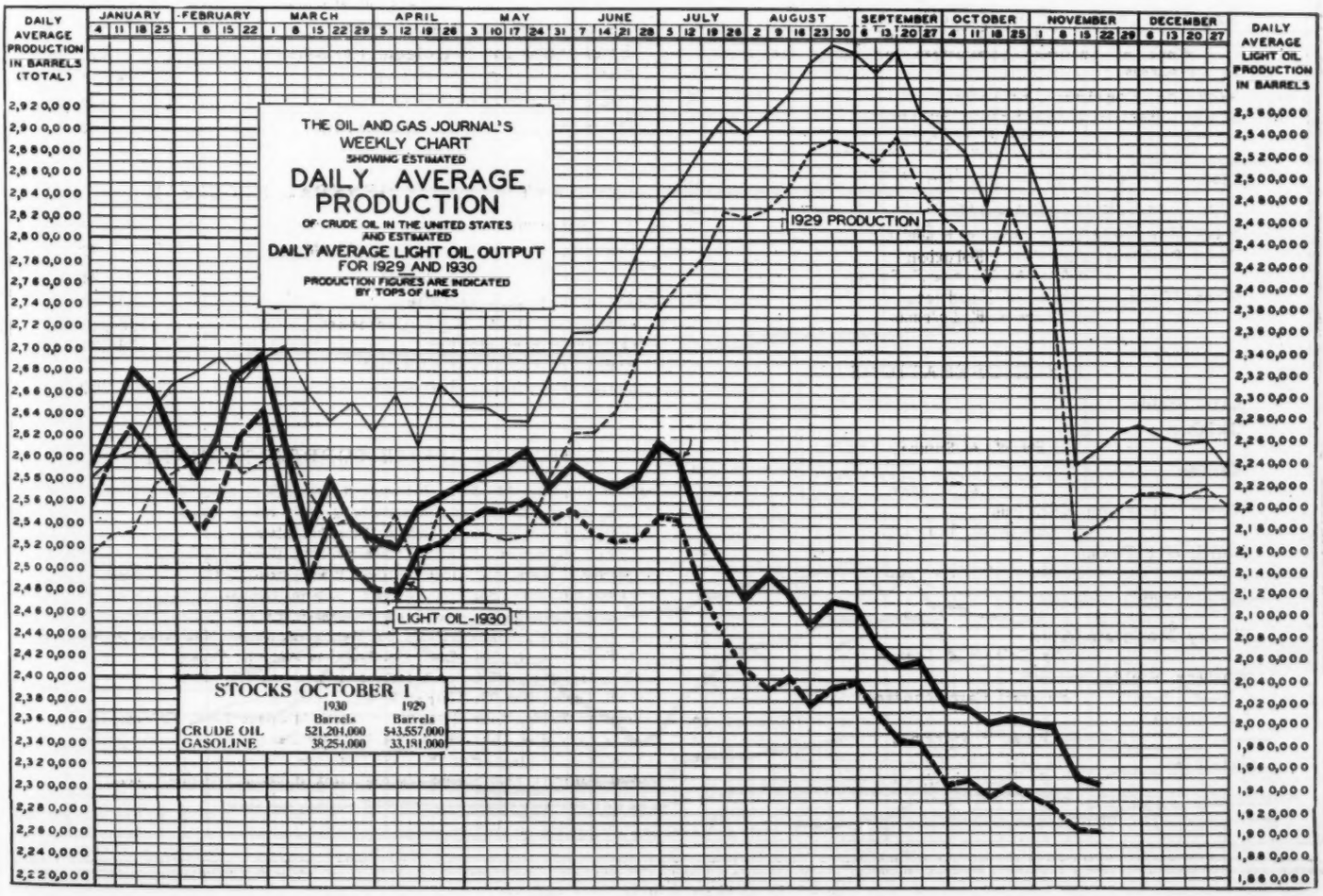
However, the industry is sure of one thing—it knows what it must do between now and April 1 of next year if it is to put its house in order and be prepared to enjoy improved conditions which will result from entering the main consuming season without burdensome stocks of gasoline to depress the entire market. The picture is clear and the figures on crude oil production and crude runs to stills easily understood. The situation is entirely up to the producing and refining branches of the industry and upon what they do depends entirely the measure of prosperity which will be experienced next year.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended November 15 and a comparison with the previous week follows:

	Nov. 15		Nov. 8	
	Light	Heavy	Light	Heavy
Oklahoma—				
Oklahoma City	84,985	.....	66,730	.....
Seminole-St. Louis	173,550	.....	148,740	.....
Remainder of State	247,380	.....	273,580	.....
Total Oklahoma	505,915	.....	489,050	.....
West Texas—				
Hendricks	61,370	.....	58,705	.....
Yates	106,185	.....	109,110	.....
Remainder	108,493	.....	113,078	.....
Total West Texas	276,048	.....	280,893	.....
North Louisiana	38,730	5,310	38,520	5,360
Arkansas	16,230	35,710	16,285	35,785
North Central Texas	105,402	.....	107,800	.....
Texas Panhandle	75,060	.....	84,350	.....
East Central Texas	41,529	.....	42,468	.....
Kansas	111,510	.....	117,260	.....
Total Mid-Continent area	1,170,424	41,020	1,176,626	41,145
Gulf Coast	.....	180,479	.....	180,463
Southwest Texas	.....	97,844	.....	103,236
Eastern	113,000	.....	113,000	.....
Rocky Mountain area	101,657	.....	101,411	.....
California—				
Santa Fe Springs	96,000	.....	98,000	.....
Long Beach	99,500	.....	98,500	.....
Playa Del Rey	37,500	.....	35,000	.....
Elwood	33,000	.....	33,500	.....
Ventura Avenue	46,500	.....	46,000	.....
Kettleman Hills	25,500	.....	24,500	.....
Remainder of State	177,500	86,000	178,500	86,000
Total California	515,500	86,000	514,000	86,000
Total United States	1,900,581	405,343	1,905,037	410,844
Grand total	2,305,924		2,315,881	

Total Decrease 9,957 Bbls.; Light Oil Decrease 4,456 Bbls.



Natural Gasoline the One Bright Spot

Lubricants and Heavy Oils Driven to Lower Levels in Oklahoma Refinery Market and Gasoline Prices Remain Weak

By W. T. Ziegenhain

Gasoline prices remained unchanged in the Oklahoma refined oil market during the past week, but several disappointing factors drove lubricants and heavy fuel oil to still lower levels. Natural gasoline is the only one in the list to show renewed strength and any improvement in the refinery gasoline market would serve as a signal for advanced prices in naturals. Kerosene continues to be freely offered and distillate offerings are well up to the increasing demands, so there is little hope of material improvement in this class of oils.

The posting of lower crude prices in Pennsylvania on November 13 is no doubt partly responsible for the posting of lower prices on neutrals and bright stocks in the Oklahoma market. A cut of 15 cents per barrel was made on all Pennsylvania grade oil, reducing the top price on that grade crude to $1.85, the lowest it has been since 1915. The popularity of Pennsylvania lubricants coupled with the very low crude price there has served as a handicap for Mid-Continent manufacturers to overcome. Attention has been focused on bright stock prices in this competitive bidding between the Pennsylvania group and the Mid-Continent manufacturers and the level of prices in both areas has been further reduced during the past week.

Champlin Cuts Crude

The posting of a lower price schedule on crude purchased by the Champlin Refining Co., November 17, also served to depress the general Oklahoma refinery market. Some jobbers interpret this move as an indication that all is not well on the horizon of the market's future and much of the confidence that has been built up during the last two weeks is dispelled. They remember that the last crude cut was the result of similar price reductions being posted by small purchasers and consider this as a possible preliminary to similar action. It is generally admitted, however, that it will be much more difficult to force a further crude reduction now than it was during the latter part of October. The new prices posted by the Champlin organization represent a reduction of approximately 20 cents per barrel. Until other small purchasers follow this lead, there probably will be little attention paid to it by refiners but must be recognized as a disconcerting factor introduced into the situation when the market appeared to be stabilizing itself.

Gasolines

U. S. Motor gasoline again appeared on the market at 4½ cents with scattered offerings made to brokers at 4⅜ cents. These sales are the exceptions, however, and the general market may be said to range between 4¾ and 5¼ cents, with all of the larger refiners adhering to a price range of 5 to 5¼ cents. Lower prices were generally quoted on the 375 endpoint and 400 endpoint gasolines, reflecting possibly the lessened opportunity of Oklahoma refiners to supply export gasoline to foreign buyers who insist these grades may be purchased at the Gulf at abnormally low prices as a result of the Export Petroleum Association suspending posting prices there.

Natural Gasolines

The A and AA grades of natural gasoline continued very strong with a fractional price gain shown for the A grade. This brought 4¾ cents and was fairly scarce. This could not be said of the BB and C grades, however, as there is a gradually increasing volume of this class of material offered as winter weather is approached. Production of these more volatile grades is naturally increased during the late fall and winter months and the outlet for them has not increased in proportion, so the weakness shown in these grades could not be taken as an indication that the entire natural market has been weakened. Refiners as a whole are increasing their purchases and a normal volume of material is moving to Gulf Coast points, and with stocks of natural gasoline very low, the immediate future of natural gasoline represents about the only bright spot in the refined oil market.

Kerosene

The regular 41-43 kerosene sold at last week's price level but the offering exceeded the demand. Distillate sales were

(Continued on Page 133)

REFINED MARKET BAROMETER

Although no general price reductions were made in refinery products, a weak undertone has developed in the market as a result of lower crude prices being posted in Pennsylvania early in the week and scattered crude reductions posted by several small refiners in the Wichita Falls, Tex., area of the Mid-Continent late in the week. The only constructive news received to counteract these factors was that refiners had endorsed the plan of the American Petroleum Institute to curtail operations to satisfy consumption only, and to hold gasoline stocks between 40,000,000 and 45,000,000 bbls. through the winter and spring months. Lubricating oils were particularly weak in the Mid-Continent and in Pennsylvania and price reductions were posted on light neutrals and bright stocks. The high cold test, heavy fuels were freely offered in all sections with price shading practiced where large volumes were involved. Natural gasoline was firmly held at last week's level and represented the only commodity to have improved its position.

Atlantic Seaboard—A weak undertone is apparent in the eastern market but prices remain unchanged.

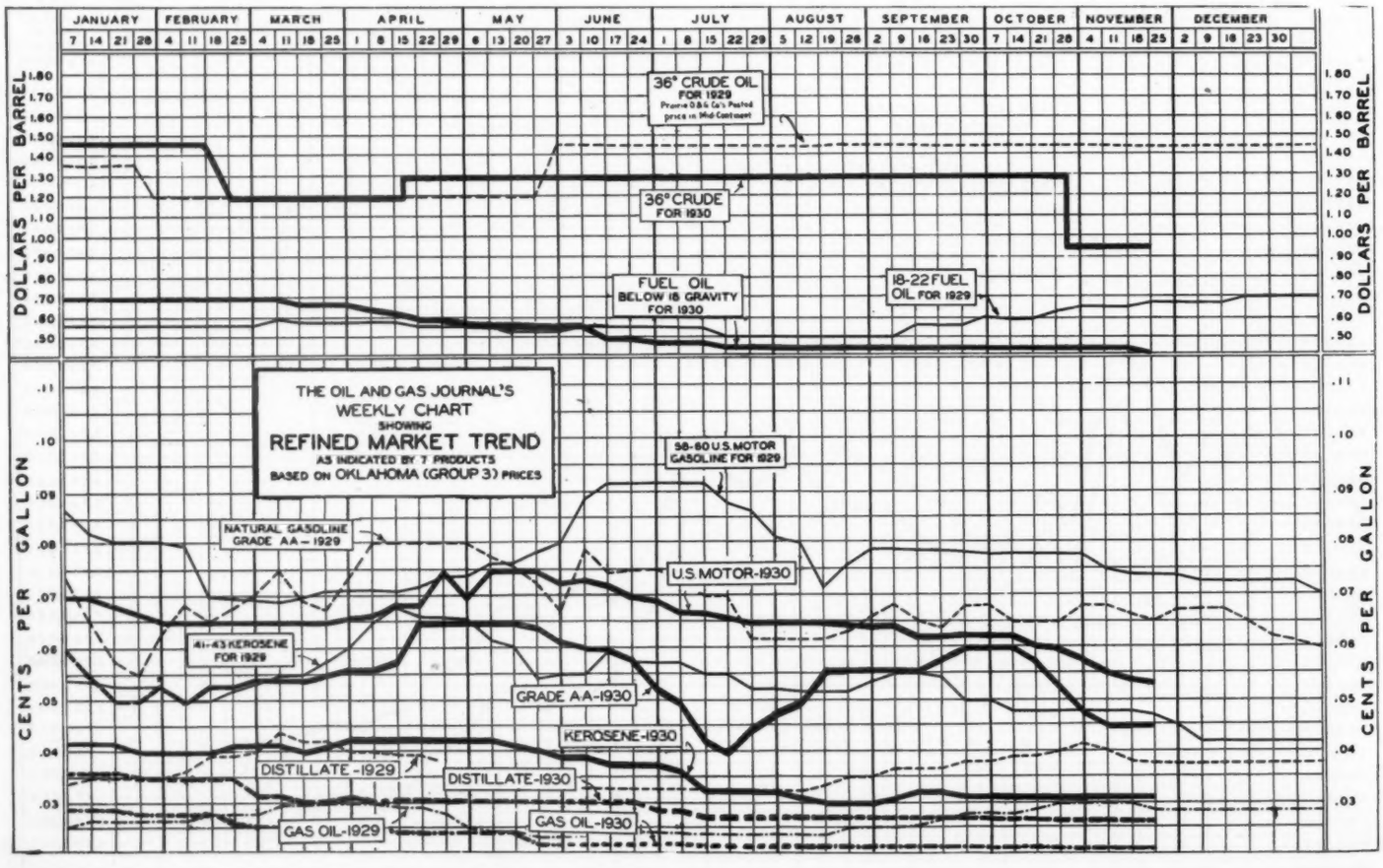
Mid-Continent—Natural gasoline is being traded at a slightly higher average price but refinery gasolines have acted in the opposite direction. Bright stocks and light neutrals were reduced early in the week. Heavy fuel oil continues to be freely offered and quotations are shaded when orders are in hand.

Pennsylvania—The posting of lower crude prices here weakened the general lubricating oil market but there have been no material price reductions.

California—The California refined oil market is marking time.

Chicago—Low priced gasoline again made its appearance in large volumes and the general market remains weak.

Gulf Coast—No change has been made in the Gulf Coast refined market although fuel oils are being offered in increasing volume.



Industry Views Its Problems Seriously

Feature of Institute Convention Was Earnest Spirit of Co-operation Shown by All. Open Meeting Beneficial

By Andrew M. Rowley

Two features stand apart from impressions gained at the eleventh annual convention of the American Petroleum Institute held in Chicago last week—first the serious attitude with which oil men, both big and little, view the present situation, the problems confronting the industry and the measures suggested for solving these difficulties; and, second, the spirit of co-operation and willingness to do his part, regardless of the personal sacrifice entailed, as shown by each individual and each company represented at the convention, and displayed especially at the open meeting of producers and refiners held Monday night, November 10.

Robert R. Penn

That joint meeting opened the eyes of the entire industry. Many thought such a meeting would resolve itself into little else than a debating society, with a multiplicity of views on each subject expressed rather heatedly. Others seemed to cling to the old idea that problems of the producer were entirely foreign to difficulties confronting the refiner and they felt little of common interest could be discussed at such a meeting.

R. C. Holmes

But with men recognized generally as world leaders of the petroleum industry sitting side by side with the so-called "little fellows," the small independent producers and refiners, and all expressing the same views and opinions, it is small wonder the remark was heard so frequently: "There sure has been a big change in the oil business during the past couple of years."

Benefit of Such Meetings

The benefit which can be derived from such meetings was impressed upon executives of the American Petroleum Institute and a wonderful opportunity will be lost if future programs of the Institute meetings do not provide abundant opportunity for such open sessions where everyone connected with the petroleum industry may air his views and obtain the opinions of others. The idea might be carried into the mid-year meetings of the different divisions of the Institute and general, open sessions be held at which problems affecting that division be discussed frankly and freely.

Gratification was expressed on all sides at the convention at the selection by the board of directors of Robert R. Penn, of the Penn Oil Co., of Dallas, Tex., to head the division of production, he being made a vice president of the Institute in charge of production. The action of the board of directors showed that these men recognized ability and hard work and that the size of a man's company does not automatically give him preference for positions of leadership in the Institute. Naturally, W. R. Boyd, Jr., executive vice president of the Institute and in direct charge of all the Institute's activities, had to make a speech congratulating the industry on Mr. Penn's selection. Bill borrowed O. O. McIntyre's pet phrase and said he (Bill) was just a country boy who had gone to the big city and made good and then he admitted that Bob Penn was also born and reared in Texas. So it looks as if Texas will wield quite an influence in the oil industry during the next year both from a production and a managerial standpoint.

R. C. Holmes, president of The Texas Company, New York, was elected a vice president of the Institute and made chairman of the division of refining and E. G. Seubert, president of the Standard Oil Co. (Indiana) was made vice president and chairman of the division of marketing.

Especially important problems confront the refining and marketing branches of the industry and Mr. Holmes and Mr. Seubert each has a big job and a most important place in Institute activities during the coming year. Both are especially well fitted for the positions to which they have been selected and good progress may be expected by the industry in general in solving the vexing problems relating to these branches of the business.

Endorse Economic Reports

The Institute endorsed recommendations of the committee on economics of the Federal Oil Conservation Board and of its own economics committee that gasoline stocks be held to a total of 40,000,000 bbls. at April 1, 1931, with curtailment of refinery runs and crude oil production necessary to achieve this gasoline inventory as of that date. The resolution of the board of directors of the Institute on this matter follows:

"Resolved by the board:

"1. That the thanks of the petroleum industry are hereby tendered to the Federal Oil Conservation Board for procuring the report of its committee on petroleum economics in time for consideration at this meeting, and, that having given consideration to the report of said committee of the Federal Oil Conservation Board, as suggested by said board in its press release of November 8, 1930, this board endorses said report and recommends to the members of the American Petroleum Institute and to the American oil industry generally, that they use their best efforts to so conduct their operations as to harmonize the supply of gasoline and crude oil operations with the views indicated in said report to the end that they may avoid the wasteful conditions indicated in said report by the proposed operations.

"2. That the report of the special committee of this board, together with the report of the statistical subcommittee, be adopted.

"3. That the industry as a whole be requested to give careful study and consideration to both of said reports and particularly to Table 1 attached to the report of the committee on Petroleum Ecomonics of the Federal Oil Conservation Board, which indicates the degree of refining operations necessary to meet varying demands for gasoline, and to Table 4 attached to said report, indicating probable allocation of crude oil production to meet these demands.

E. G. Seubert

W. R. Boyd, Jr.

"4. That these resolutions and the reports of the two committees referred to be published and brought to the attention of the industry as a whole.

"5. That the adoption of the fore-

(Continued on Page 132)

IRAQ PIPE LINE WILL OPEN NEW SUPPLY BUT NOT FOR THREE YEARS

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, Nov. 18.—H. S. Austin, president of the Ajax Pipe Line Co. and formerly president of the Tuscarora Pipe Line Co., will sail from New York, Thursday for Iraq in Asia Minor to consult with Dutch, British and French oil men regarding the construction of the projected pipe line which will link up the Iraq (Mesopotamian) oil fields with the Mediterranean Sea.

Mr. Austin will serve as representative of the Standard Oil Co. of New Jersey, Standard Oil Co. of New York, Atlantic Refining Co., Gulf Oil Corp., and Pan American Petroleum & Transport Co., American participants in the Iraq Petroleum Co. which at present has control over the petroleum development in Iraq.

While a definite understanding has been reached among American, British and French companies which control the Iraq Petroleum Co. for the construction of the pipe line to transport Iraqian crude to the Mediterranean, no definite decision has been reached as yet as to when construction of the line will be started.

Details of the new Iraq line are not available as yet but it is expected that the pipe line system will be constructed to permit of the movement of between 50,000 and 100,000 bbls. per day when the entire system is completed and in operation.

While the decision of the Iraq Petroleum Co. to go forward with its development work promises an additional flow of crude to add to the world's oversupply, the influence of Iraq's production will not be felt on the world markets for at least two years, and it is probable that Iraq will not be fully developed as a major world producer for at least three years and possibly longer.

The construction of the Iraq line, it is understood here, presents many difficulties owing both to the terrain over which the line must pass and the unsettled conditions which have prevailed in this area during recent years. While the country in which the Iraqian development will take place and over which the pipe line must pass is theoretically pacified, both the British and French are keeping strong military forces in the field and the pipe line survey work has been done with military escorts for the surveying parties and additional protection extended these parties by British air forces operating in the territory.

Division of Ownership

The Iraq Petroleum Co. is controlled jointly by American, British, Dutch, and French groups, each of which hold a 23¾ per cent interest in the company, the remaining 5 per cent being held by Sarkis Gulbenkian, an Armenian financier, who was the original concessionaire.

(Continued on Page 135)

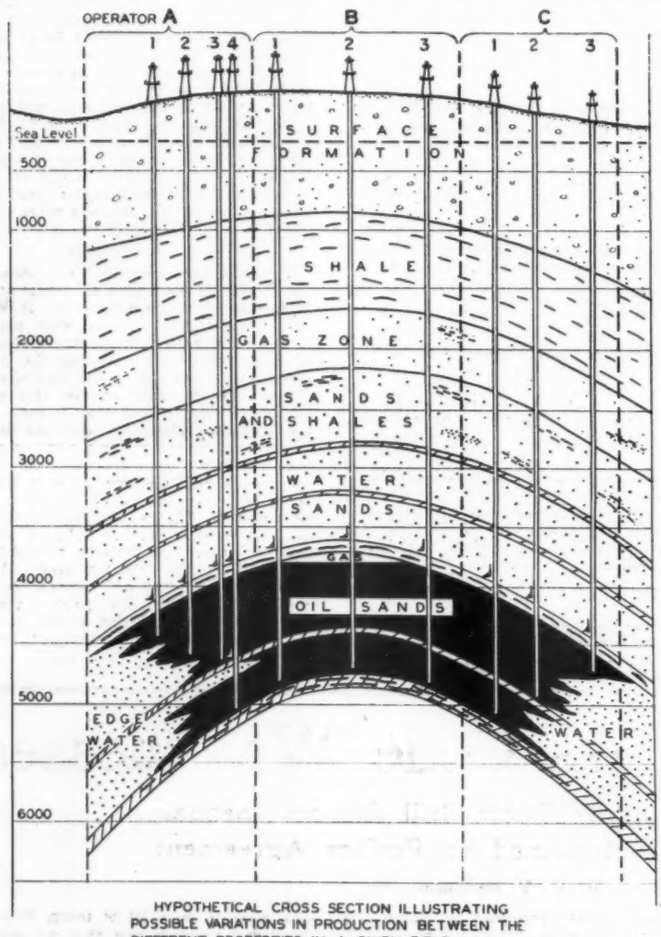
Economic Problems of Unitization

Engineering Aspects of Practical Application of Unit Operation. Difficulties to Be Overcome

By T. E. Swigart
Superintendent of Production, Shell Oil Co., Los Angeles, Calif.*

To be successful, unit operation must be developed along such lines as to give the greatest possible assurance of fairness to all parties interested. Co-operative operation, as compared to unit operation, implies that every operator retains his properties and conducts his own development work. This means retention of the competitive principle of offset drilling and production as every operator must protect his respective lessors and himself by drilling and producing necessary offset wells. The impracticability of this is clearly illustrated by an actual problem that would confront operators under co-operative operation in the Kettleman Hills North Dome Field. Quoting from a discussion read before the American Institute of Mining and Metallurgical Engineers:[1]

"Assume, for example, that under a competitive development program, operator A owns 15 per cent of the proved acreage of the field and is entitled to a similar share of its total oil production and that operator B owns a 0.5 per cent interest. Assume also that the field is allowed to produce 30,000 bbls. per day of oils of all gravities and that the average gasoline content of these oils is 75 per cent. Operator A would be assigned a daily oil production of 4,500 bbls. per day and B 150 bbls. per day. Operator A would doubtless own several tracts with rather extensive boundaries which would have to be protected against offset wells. Considering the diversity of ownership both of landowners and operators, an operator owning as much acreage as A would have to drill at least 20 wells if every other operator drilled enough wells to give each of their landowners a share of the production and protection against drainage. Thus A might be required to produce as little as 50 or 100 bbls. per day from small tracts. Probably a single well could never be allowed to produce more than a few hundred barrels per day. Operator B might have such a small tract that he would need to drill only one well to protect his property, in which case his one well could produce the 150 bbls. per day. However, it might also happen that he would have to drill and produce four wells to insure protection, in which event each well could only produce 37.5 bbls. per day. Remembering that Kettleman wells normally produce several thousand barrels per day of oil and even then develop tremendous pressures, it is doubtful if it would be safe and mechanically feasible to restrict the flow of a well to 37.5 bbls. per day. Certainly an operator could not afford to drill a well at a cost of $350,000 to $400,000 for 37.5 bbls. per day even though the oil was practically all gasoline.



HYPOTHETICAL CROSS SECTION ILLUSTRATING POSSIBLE VARIATIONS IN PRODUCTION BETWEEN THE DIFFERENT PROPERTIES IN A GIVEN FIELD

Figure 1.

"The problem of equitable division of production under co-operative action is further complicated by the gas and gasoline produced with the oil as both these substances are valuable to their owners and both are extremely migratory in character. In fact, drainage is exaggerated in the case of these substances. Consider that wells produce with different gas-oil ratios depending on the exact zone being drained and the methods of handling the wells. Adding these factors to the complications pointed out previously in dividing oil output among all landowners and operators, it is obvious that the problem involves too many complications to permit a mechanical division of products by means of flowing wells on every property at given rates and still insure fairness."

Unit operation permits such fine divisions of production or revenues from oil, gas and natural gasoline to be made with fairness because every original owner has an undivided interest in the entire field and the need for offset drilling and production is thereby eliminated.

A further argument against co-operative operation is the impracticability of imposing adequate penalties to insure full performance of the co-operative agreement by all parties. If the agreement is loosely drawn and dependent upon good faith, violation brings no penalty to the offender but to the contrary penalizes the other signatory parties. If penalties are severe enough to protect all parties against violation, they must be of the nature of awards of part or all of any overproduction of the offender and this is virtually unit operation. Co-operative operation, furthermore, usually involves determinations of potential productions which in turn are greatly influenced by the methods involved in handling wells and such matters generally lead to controversy.

Competitive and Unit Operation

Possible savings in development and production costs through group operation in a given field as compared to competitive operation provided the first incentive for adoption of the unit form of development and production. This feature of unit operation has been somewhat overlooked in recent months chiefly because of the adaptability of unit plants to the control of overproduction and the vital importance of overproduction to the industry. However, the savings in development and production costs under unit operation as compared to competitive operation will usually be of tremendous proportions and alone are ample justification for consideration of unit plans.

Relation of Unit Operation to Ultimate Revenue

Many opportunities exist under unit operation for increasing ultimate recovery and revenue. The unit operating company would be expected to employ technical and operating men of the highest caliber and these men would be aided in their production operations by the removal of legal boundary restrictions, excepting for a possible few tracts of outside acreage. The greatest advantage of such latitude is in controlling gas and thus insuring that it does the maximum amount of work in driving oil through the sands to wells. Also, such matters as repressuring or underground storage of surplus dry gas that has no ready market can be readily handled under unit operation, whereas they are frequently eliminated from consideration under competitive methods because of migration from one property to another.

Revenues from production should be favorably affected because of the possibility of regulating the supply of oil to meet the demands and, therefore, maintenance of a reasonable price for oil. It should be mentioned that application of the discount factor seriously affects the present worth of an oil property if the time of recovery of oil and gas is appreciably lengthened as it would be under unit operation in times of overproduction.

Valuation Estimates

Preliminary valuation estimates were prepared for Kettleman Hills North Dome Field to determine the possible effect of future price of oil on expected net income and present worth and of the discount factor on present worth under unit and competitive operation. These factors would be unusually important at Kettleman because under competitive operation the indicated large production of light oil would doubtless break the oil market and thus greatly reduce the expected net income. Under unit operation a conservative production of oil and gas would be maintained for many years and while this should result in maintaining

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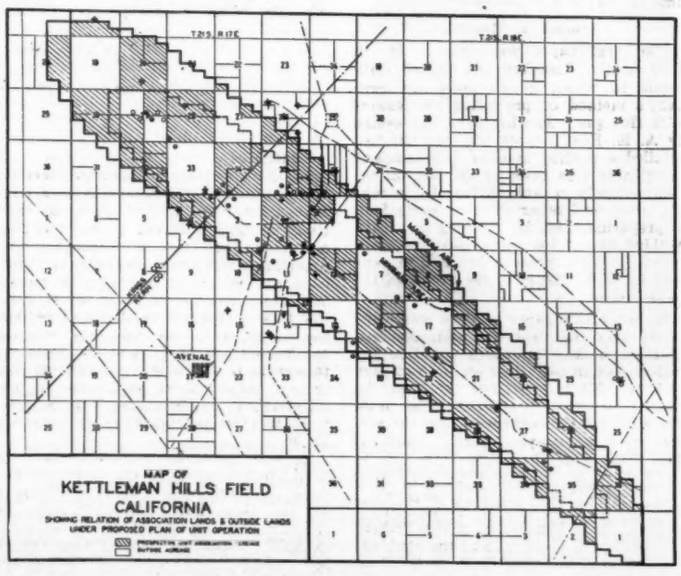
MAP OF
KETTLEMAN HILLS FIELD
CALIFORNIA
SHOWING RELATION OF ASSOCIATION LANDS & OUTSIDE LANDS UNDER PROPOSED PLAN OF UNIT OPERATION
AVENAL

Figure 2.

*Before A.P.I., Chicago.

[1]Swigart, T. E., Discussion of Robert W. Patterson's paper on Kettleman Hills Unit Plan, A.I.M.E., October 17, 1930.

Refinery Operators Discuss Problems

Use of Acoustimeter, Interpretation of Distillation Curve, Safety and Hydrogenation Feature Meetings

By W. T. Ziegenhain

CHICAGO, Nov. 15.—Those questions which arose in the discussion immediately following the presentation of the papers before the refining group during the A.P.I. convention here last week were answered with a completeness and sincerity that added much weight to the significance and importance of the meetings.

In opening the Refinery Engineering session Wednesday morning, Dr. E. W. Isom of the Sinclair Refining Co., as presiding officer, first called for the paper on the "Determination of Evaporation Losses" and this was read by W. G. Whitman of the Standard Oil Co. (Indiana). In it was presented a new and convenient way of measuring evaporation losses by vapor pressure changes. The discussion which followed took up the greater share of the morning session. William Mendius of the Sinclair Refining Co. offered a discussion of the paper and then asked whether the method outlined might be applied to ascertaining the losses of casinghead gasoline having a vapor pressure higher than one atmosphere. Mr. Whitman answered this question by saying: "Casinghead, or any gasoline with a vapor pressure higher than one atmosphere, at our standard temperature of 75° F. can be run at a lower temperature. For example, we have run temperatures of 45° to get the vapor pressure of such samples. The limit is determined by the thermostat and quite high vapor pressures can be determined by simply carrying the thermostat low enough." G. G. Oberfell of the Phillips Petroleum Co. then introduced the suggestion that the Reid vapor pressure method be applied to accomplish similar results. He said: "I should like to suggest using the Reid vapor pressure apparatus itself. It may be used to determine, I believe, losses in processing oils with vapor pressure of more than one atmosphere. The suggested procedure would be to have several air bombs and measure the change in each vapor pressure as each succeeding bomb is added. In this case it would be necessary to have valves between each liquid bomb and air bomb, and it would be necessary to calculate the volume of vapor liberated. I think this procedure is feasible and suggest it is possible that a greater degree of accuracy may be obtained in ascertaining the loss in the volume of evaporation evolved."

Papers at Meeting

The next paper was that of H. H. Hall of the Standard Oil Co. of California in which he discussed his company's method of protecting oil tankers with flue gas. Another paper, presented by A. E. Pew, Jr., of the Sun Oil Co., detailed a method used by this company in utilizing flue gases to displace oil vapors, not only in tankers, but also in towers, stills and other refinery equipment, in preparing them for cleaning or repair. A third paper, discussing means of combating the ever present fire hazard, was read by C. H. Haupt of the Standard Oil Development Co.

In Mr. Hall's paper mention was made of the fact that less corrosion occurred in those tankers in which the flue gas system was in use, than on the ordinary tankers. When questioned regarding the reason, he simply stated that the problem was under investigation and the records over a two-year period indicated this to be true, but that it would be necessary to continue observations before any final statement could be prepared.

In the afternoon session of the refinery division, C. L. Henderson of the Vickers Petroleum Co. presided, and the first paper presented was that of T. A. Boyd on the progress toward standardizing methods of measuring detonation. Following his presentation, D. P. Barnard, IV, Standard Oil Co. (Indiana), and Daniel Roesch of the Armour Institute of Technology, demonstrated the use of the acoustimeter to measure the intensity of knock in a motor. An interesting discussion by Dr. Graham Edgar of the Ethyl Gasoline Corp. then developed in which he pointed out the care which the industry is taking in preparing a standard reference fuel, and how arrangements have been made to make the supply adequate for at least several years in the future. Doctor Edgar said: "There are two primary standard reference fuels used in this country, and unofficially in England, i.e., normal heptane and iso-octane. They are materials which must be secured in a very high and constant state of purity. It has been a great problem to get any standard certified by government agencies, because of the necessary accuracy involved. However, our problem has been simplified by a curious biological phenomenon. The Jeffery pine which grows in the Sierras of California almost exclusively, contains in its gum, normal heptane. This may be recovered in absolute purity by a simple process of distillation. So far, this is the only source of heptane of sufficient purity to be used as a standard. The only objection has been the difficulty of securing it. The trees grow above the snow line, and it is difficult to recover 500 to 1,000 gallons of this material a year without adequate equipment." Doctor Edgar then said that the California Chemical Co. has agreed to undertake to supply an adequate quantity of pure heptane from this source, providing the industry will pay a price sufficient to equalize the $10,000 to $15,000 expenditure necessary for equipment. This provision had been previously approved by a committee of the American Petroleum Institute and apparently the problem has been taken care of, at least for the next few years.

Give Demonstration

Following these remarks Doctor Roesch and Doctor Barnard gave an actual demonstration of the acoustimeter. It was used in connection with an early model of the A.P.I. antiknock engine, developed by a special committee during the past three years. The engine was started and Doctor Barnard explained that this was one of the first C.F.R. engines built by the Waukesha Motor Co. and had been in operation at the Whiting plant of the Standard Oil Co. (Indiana) for 18 months. It had seen from 2,500 to 3,000 hours of service and shows no signs of deterioration. It is equipped with a small carburetor and the cylinder head may be removed and replaced with either the fixed or the movable head. The acoustimeter reading as indicated by a hand moving over a scale clearly indicated the intensity of sound as the knock was varied by changing the spark posi-

(Continued on Page 100)

SUMMARY OF REFINERY TECHNICAL PAPERS

Although the refinery technology meetings, held during the American Petroleum Institute convention, showed the best attendance of any year, there undoubtedly were many men directly interested in the papers and the discussion presented who could not attend, and we are here attempting to include the high points of the discussion which followed the respective papers. Practically all of the papers delivered during the two-day session have been published in The Oil and Gas Journal and appear as follows:

"Determination of Evaporation Losses," by G. W. Chenicek and W. G. Whitman, Standard Oil Co. (Indiana), November 13, page 78.

"Protecting Tankers by Flue Gas," by H. H. Hall, Standard Oil Co. of California, November 13, page 136.

"Flue Gas for Reducing Fire Hazard," by A. E. Pew, Jr., Sun Oil Co., November 13, page 128.

"Influence of Fire Hazards in the Petroleum Industry," by C. H. Haupt, Standard Oil Development Co., with the collaboration of O. H. Gundlach, Sinclair Refining Co., and W. W. Lowe, H. L. Doherty & Co., November 13, page 140.

"Progress Toward a Uniform Method of Measuring Detonation," by T. A. Boyd, General Motors Corp., November 13, page 124.

"The Meaning of the Gasoline Distillation Curve," by Graham Edgar, Ethyl Gasoline Corp.; T. A. Boyd, General Motors Corp.; and J. Bennett Hill, Atlantic Refining Co., November 13, page 144.

"Control of Color of Petroleum Oils by Acid Treating," by H. M. Weir, W. F. Houghton and F. M. Majewski, Atlantic Refining Co., November 13, page 122.

"The Catalytic Reactions of Organic Sulphur Compounds," by H. S. Taylor, Princeton University, November 20, page 38.

The paper delivered by R. T. Haslam and R. P. Russell, Standard Oil Development Co., on "Hydrogenation of Petroleum" is awaiting revisions and will be published at an early date.

Frankly Discuss Code Weaknesses

Marketers Recognize There Still Remain Inequalities but Are Determined to Perfect Agreement

By W. T. Ziegenhain

CHICAGO, Nov. 15.—During the American Petroleum Institute meeting this week, the leaders of the marketing branch of the industry discussed their problems with a frankness and singularity of thought that should have a far-reaching effect upon cleaning up many of the loose practices that still remain under the code of ethics. By pointing out the unfavorable factors that still remain, the supporters of the code hope to bring to the surface every possible weakness in making it workable in its entirety, and then to correct these weaknesses so that ultimately it may be shaped into the practical, forceful instrument it was intended to be.

It was generally conceded that the production branch of the industry had done its work well. This is evidenced by the fact that crude production is now 290,000 bbls. below the lowest point in 1929. Similarly the refining branch has reduced crude runs so charges are now 500,000 bbls. below what they were a year ago. At no time during 1930 did this year's runs for any month equal those of the corresponding month last year. Those in attendance were frank in stating that it was now up to the marketing branch to get its house in order.

Solution in Code

Full recognition of the code and the willingness on the part of all signers to abide by the provisions of the code in spirit as well as to the letter, was offered as the one means of clearing up the situation. The chief points of weakness in the code that yet remain, include the matter of commercial discounts and the principles involved in licensing and leasing marketing facilities. P. M. Miskell, general manager for the Empire Oil & Refining Co., following his report to the assembly on the progress of the code throughout the Mid-Continent region, issued a warning in this regard as follows: "I have had the opportunity to work long and hard on the adoption of the code and I know the troubles that we have had in getting an agreement for its adoption. What I now regret, and what I see going on at the present time is that, I am afraid, the code is being used as a guise to do a lot of things in our every day business now that we never would have attempted before we put the code into effect. Two important code rules are being referred to, that covering the lease and license agreement and the other one on commercial discounts." Support was given to Mr. Miskell's statement by J. T. Dyer of the Sinclair Refining Co. who explained his views by saying: "There is one wholly artificial and unworkable provision in the code—one which is unsound in principle and hence impossible in practice. I refer to the exception to the price posting requirement of Rule 17 in favor of commercial accounts. The rule says all prices must be posted. It then recognizes an exception to the posting of prices in the preferential treatment of commercial discounts. I am making no comment here as to the practice of allowing commercial discounts, but I am confining myself to pointing out the unsoundness of setting up a regulation requiring the posting of all prices, and then excepting

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Report Shows What Industry Must Do

Institute's Committee Recommends 8.2 Per Cent Reduction in Refinery Runs to Bring Stocks to Better Level

Especial interest was manifest at the annual convention of the American Petroleum Institute in Chicago last week in the report of the statistical subcommittee of the Institute's committee on economics, which report was endorsed by the board of directors and referred to the industry for study. The subcommittee was composed of John D. Gill, chairman; Fred Van Covern, secretary; O. S. Ambrose, H. K. Davis, David Donoghue, Clarel B. Mapes, E. P Salisbury and Earl Wagy. The report of that committee follows: (Note—The complete report of the committee on economics of the Federal Oil Conservation Board was published in The Oil and Gas Journal of November 13).

Comments on the Results of Recent Survey by Questionnaire

Replies received in answer to the recent A.P.I. Questionnaire from companies representing 75.8 per cent of the total of potential refining capacity of the country indicate that refiners contemplate running 490,603,000 bbls. of crude oil to stills during the six months' period ending April 1, 1931. This is at the rate of 2,696,000 bbls. each day. Applying the same yields as are used elsewhere in this report and also the estimate of imports of gasoline, this amount of crude will make available 248,686,000 bbls. of gasoline.

The Bureau of Mines reports that there were 38,242,000 bbls. of gasoline at refiners on October 1, 1930. The returns from refiners indicate that they contemplate having a total of 52,127,000 bbls. of gasoline on hand at refineries on April 1, 1931, or an addition to October 1, 1930, storage of 13,885,000 during the six months' period. Subtracting the 13,885,000 bbls. which they expect to add to storage from the 248,686,000 bbls. of gasoline which the above crude runs will make available, it immediately becomes apparent that the refining industry is anticipating a demand for a total of 234,801,000 bbls., or an increase of 14.25 per cent over the demand during the same period of 1929-1930. This is in direct contrast with the subcommittee's estimate of a 1.2 per cent increase in total demand over the same period.

On the other hand, refiners may have contemplated that the yield of gasoline from crude would be reduced from 43.3 per cent to 38.4 per cent.

The combination of these two is also possible.

However, the subcommittee thinks all of the foregoing unlikely and that if the 490,603,000 bbls. of crude oil are actually run into stills there will be created an oversupply of gasoline to the extent of 40,686,000 bbls., which when added to the 38,242,000 bbls. on hand on October 1, 1930, indicate gasoline stocks at refineries as of April 1, 1931, of 78,928,000 bbls.

The results of running 490,603,000 bbls. of crude oil under conditions of the maximum yield of fuel oil consistent with the minimum over-all yield of gasoline, 38.4 per cent as shown above, would be a refinery output east of California of 140,000,000 bbls. of gas and fuel oil, a total supply of 158,000,000 bbls., and assuming a demand of 146,000,000 bbls., an accumulation of gas and fuel oil in storage of 12,000,000 bbls. Contrasted to such accumulation the industry during corresponding six months periods experiences

GENERAL STATISTICAL SUMMARY
Gasoline Demand for Period October 1 to April 1

	Actual 1929-1930	Estimated 1930-1931	Per cent increase
Domestic demand	173,058,000	175,400,000	1.35
Exports	32,466,000	32,600,000	0.41
Total demand	205,524,000	208,000,000	1.20

The Following Compilations Have Been Based Upon Gasoline Stocks as of April 1, 1931

Of	(Low) 35,000,000	(Estimate) 40,000,000	(High) 45,000,000	
Gasoline				Basis
Total demand	208,000,000	208,000,000	208,000,000	A
Stocks Oct. 1, 1930	38,200,000	38,200,000	38,200,000	B
Stocks Apr. 1, 1931	35,000,000	40,000,000	45,000,000	C
Change in stocks (+ or −)	−3,200,000	+1,800,000	+6,800,000	
Required new supply	204,800,000	209,800,000	214,800,000	D
Imports (deduct)	9,000,000	9,200,000	9,400,000	A
Required refinery output	195,800,000	200,600,000	205,400,000	
From natural (deduct)	21,100,000	21,600,000	22,100,000	E
From cracked (deduct)	77,300,000	79,200,000	81,100,000	E
From straightrun	97,400,000	99,800,000	102,200,000	F
Crude				
Runs to stills (east of California)	318,300,000	325,473,000	334,040,000	
Runs to stills (California) (add)	85,849,000	87,900,000	90,026,000	G
Total runs to stills, United States	404,149,000	413,373,000	424,066,000	H
Exports (add)	12,000,000	12,000,000	12,000,000	A
Used as such (add)	10,000,000	10,000,000	10,000,000	A
Total demand	426,149,000	435,373,000	446,066,000	
Imports (deduct)	28,238,000	28,875,000	29,538,000	A
Demand for United States crude	397,911,000	406,498,000	416,528,000	
Gas and Fuel Oil East of California				
Note—Due to the abundance of fuel oil on the Pacific Coast, only the fuel oil situation east of California is presented below.				
Total demand	146,000,000	146,000,000	146,000,000	A
Refinery production (deduct)	109,813,000	112,288,000	115,244,000	I
Production deficit	36,187,000	33,712,000	30,756,000	
Imports (deduct)	15,000,000	15,000,000	15,000,000	A
Intercoastal receipts (deduct)	3,000,000	3,000,000	3,000,000	J
Withdrawal from stocks	18,187,000	15,712,000	12,756,000	
Stocks Oct. 1, 1930	35,820,000	35,820,000	35,820,000	B
Estimated stocks Apr. 1, 1931	17,633,000	20,108,000	23,064,000	

(A) Average of individual estimates submitted by members of committee.
(B) From Bureau of Mines report for September.
(C) Assumed stock programs.
(D) Total demand adjusted for change in stocks.
(E) Based upon present program reduced under various assumed stock programs.
(F) Total refinery output minus production from natural gasoline and cracking.
(G) Crude required to produce pro rata of straightrun gasoline in California.
(H) Based upon average straightrun gasoline yield of 24.1 per cent from crude.
(I) Based upon average net gas and fuel oil yield of 34.5 per cent from crude east of California.
(J) Based upon composite estimate compiled from individual reports of California operators.

GENERAL STATISTICAL SUMMARY
(Daily Average Basis)
Gasoline Demand for Period October 1 to April 1

	Actual 1929-1930	Estimated 1930-1931	Per cent increase
Domestic demand	950,900	963,800	1.35
Exports	178,400	179,100	0.41
Total demand	1,129,300	1,142,900	1.20

The Following Compilations Have Been Based Upon Gasoline Stocks as of April 1, 1931

Of	(Low) 35,000,000	(Estimate) 40,000,000	(High) 45,000,000	
Gasoline (Daily Averages)				Basis
Total demand	1,142,900	1,142,900	1,142,900	A
Stocks Oct. 1, 1930	38,200,000	38,200,000	38,200,000	B
Stocks Apr. 1, 1931	35,000,000	40,000,000	45,000,000	C
Change in stocks (+ or −)	−17,600	+9,800	+37,300	
Required new supply	1,125,300	1,152,700	1,180,200	D
Imports (deduct)	49,500	50,500	51,600	A
Required refinery output	1,075,800	1,102,200	1,128,600	
From natural (deduct)	115,900	118,700	121,400	E
From cracked (deduct)	424,700	435,200	445,600	E
From straightrun	535,200	548,300	561,600	
Crude (Daily Averages)				
Runs to stills (east of California)	1,748,900	1,788,300	1,835,400	
Runs to stills (California) (add)	471,700	483,000	494,600	G
Total runs to stills, United States	2,220,600	2,271,300	2,330,000	H
Exports (add)	65,900	65,900	65,900	A
Used as such (add)	55,000	55,000	55,000	A
Total demand	2,341,500	2,392,200	2,450,900	
Imports (deduct)	155,200	158,700	162,300	A
Demand for United States crude	2,186,300	2,233,500	2,288,600	
Gas and Fuel Oil East of California (Daily Averages)				
Note—Due to the abundance of fuel oil on the Pacific Coast, only the fuel oil situation east of California is presented below.				
Total demand	802,200	802,200	802,200	A
Refinery production (deduct)	603,400	617,000	633,200	I
Production deficit	198,800	185,200	169,000	
Imports (deduct)	82,400	82,400	82,400	A
Intercoastal receipts (deduct)	16,500	16,500	16,500	J
Withdrawal from stocks	99,900	86,300	70,100	
Stocks Oct. 1, 1930	35,820,000	35,820,000	35,820,000	B
Estimated stocks Apr. 1, 1931	17,633,000	20,108,000	23,064,000	

(A) Average of individual estimates submitted by members of committee.
(B) From Bureau of Mines report for September.
(C) Assumed stock programs.
(D) Total demand adjusted for change in stocks.
(E) Based upon present program reduced under various assumed stock programs.
(F) Total refinery output minus production from natural gasoline and cracking.
(G) Crude required to produce pro rata of straightrun gasoline in California.
(H) Based upon average straightrun gasoline yield of 24.1 per cent from crude.
(I) Based upon average net gas and fuel oil yield of 34.5 per cent from crude east of California.
(J) Based upon composite estimate compiled from individual reports of California operators.

RESULTS OF RECENT SURVEY BY QUESTIONNAIRE

Refinery area—	Potential daily capacity of all refineries	Potential capacity reporting: Amount	Potential capacity reporting: % of total	Estimated actual stocks of gasoline as of April 1, 1931: At refiners as reptd.	Estimated actual stocks of gasoline as of April 1, 1931: At refiners calcul'd total all refineries	Estimated actual stocks of gasoline as of April 1, 1931: At bulk terminals and in transit as reptd.	Estimated amount of crude oil to be run to stills, 10-1-30 to 4-1-31: As reptd.	Estimated amount of crude oil to be run to stills, 10-1-30 to 4-1-31: Calculated total all refineries	Estimated amount of crude oil to be run to stills, 10-1-30 to 4-1-31: Calculated total daily
East Coast	612,700	590,500	96.4	8,728,000	8,800,000	6,167,000	85,254,000	88,400,000	486,000
Appalachian	141,300	99,400	70.3	1,457,000	2,100,000	303,000	14,268,000	18,500,000	102,000
Indiana, Illinois, Kentucky	390,800	315,000	80.6	5,982,000	7,600,000	570,000	43,885,000	54,900,000	302,000
Oklahoma, Kansas	461,100	277,200	60.1	3,198,000	5,300,000	26,000	34,765,000	57,800,000	318,000
Texas	809,000	565,200	69.9	4,359,000	6,400,000	77,000	93,589,000	127,000,000	697,000
Louisiana, Arkansas	266,600	209,100	78.4	1,986,000	2,500,000	531,000	26,333,000	33,600,000	185,000
Rocky Mountain	150,100	112,400	74.9	1,637,000	2,200,000	.....	6,187,000	8,800,000	48,000
California	898,500	658,900	73.3	12,869,000	17,200,000	*.....	74,470,000	101,600,000	558,000
Total United States	3,730,100	2,827,700	75.8	40,216,000	52,100,000	7,674,000	378,751,000	490,600,000	2,696,000
Texas Gulf Coast	529,500	426,500	80.5	3,427,000	4,200,000	52,000	60,271,000	74,900,000	412,000
Louisiana Gulf Coast	147,500	141,000	95.6	1,850,000	1,900,000	150,000	18,818,000	19,700,000	108,000

*Included in "at refineries."

a withdrawal from storage of approximately 12,000,000 bbls.

The details of the foregoing are presented in the following tables:

POSSIBLE GASOLINE SITUATION

	Bbls.
Crude runs to stills	490,603,000
Applying a straightrun yield of 24.1 per cent	118,235,000
Cracked yield of 19.2 per cent.	94,196,000
Natural gasoline blended	26,255,000
Total domestic production	238,686,000
Imports	10,000,000
Total gasoline supply	248,686,000
Less estimated demand*	208,000,000
Excess supply above demand	40,686,000
Stocks October 1, 1930	38,242,000
Probable stocks April 1, 1931	78,928,000

*Subcommittee estimate.

Gasoline supply apparently contemplated by refiners	248,686,000
Additions to October 1, 1930, stocks	13,885,000
Apparently contemplated demand	234,801,000
Actual demand October 1, 1929-April 1, 1930	205,524,000
Expected increase	29,277,000
	14.25%

THE POSSIBLE FUEL OIL SITUATION

Total U.S. crude runs	490,603,000
California	101,400,000
East of California	389,203,000
Gas and fuel yield 36 per cent	140,113,000
Imports	15,000,000
Intercoastal shipments	3,000,000
Total supply east of California	158,113,000
Estimated demand	146,000,000
To storage east of California	12,113,000

Additional data furnished in reply to the following question from the General Committee:

Question: What will be the effect upon the crude oil demand if the production of cracked gasoline is increased or decreased by units of 1,000,000 bbls. from the figures appearing in the General Statistical Summary.

With reference to the gasoline supply from cracking, shown in the "General Statistical Summary," for every 1,000,000-bbl. reduction in this item, it would require a consequent increase of 4,149,378 bbls., or 22,799 bbls. per day, of crude oil demand to supply the equivalent amount of straightrun gasoline. On the other hand, for every 1,000,000-bbl. increase in this item, a reduction equivalent to the above increase in crude oil demand would result.

Change cracked gasoline	Change crude oil demand Total	Dy. ave.
—1,000,000	+4,149,400	+22,800
—2,000,000	+8,298,700	+45,600
—3,000,000	+12,448,100	+68,400
—4,000,000	+16,597,500	+91,200
—5,000,000	+20,746,900	+114,000
+1,000,000	—4,149,400	—22,800
+2,000,000	—8,298,700	—45,600
+3,000,000	—12,448,100	—68,400
+4,000,000	—16,597,512	—91,200
+5,000,000	—20,746,900	—114,000

In case gasoline imports were changed, the crude requirements would be affected approximately in a similar manner.

Should any changes be made particularly by increasing the supply of gasoline through cracking or imports with a consequent decrease in its supply from straightrun, it will at once be apparent that the supply of gas and fuel oil would be further diminished. It is doubtful if these stocks east of California should be lowered below the stocks indicated for April 1, 1931.

ESTIMATED CRUDE OIL DEMAND IN THE UNITED STATES BY DISTRICTS—

Oct. 1, 1930, to April 1, 1931

(Based on 40,000,000-bbl. gasoline stock)

Field—	Total demand Barrels	Daily av'r'ge Barrels
Pennsylvania	10,561,000	58,000
Kentucky	4,447,000	24,400
Lima, Ind.	1,809,000	9,900
Ill., Ind.	3,325,000	18,300
No. La. & Ark.	15,716,000	86,400
W. Texas & N. Mex	57,562,000	316,300
Okla.,Kan.,N.Texas	173,574,000	953,700
Gulf Coast	32,365,000	177,800
Rocky Mt.	10,663,000	58,600
California	96,476,000	530,100
Foreign	28,875,000	158,700
Total	435,373,000	2,392,200
Total crude demand	435,373,000	
Foreign crude	28,875,000	
Domestic demand	406,498,000	
Daily average	2,234,000	
(Based on 35,000,000-Bbl. gasoline stock)		
Total crude demand	426,149,000	
Foreign crude	28,238,000	
Domestic demand	397,911,000	
Daily average	2,186,000	
(Based on 45,000,000-Bbl. gasoline stock)		
Total crude demand	446,066,000	
Foreign crude	29,538,000	
Domestic demand	416,528,000	
Daily average	2,289,000	

METHOD OF DETERMINING CRUDE RUNS TO STILLS BY DISTRICTS

(Figures in barrels of 42 gallons)

	Gasoline stocks at refineries Oct. 1, 1929 (1)	Apr. 1, 1930 (2)	Apparent excess refinery gasoline prod. during Oct. 1, 1929-Apr. 1, 1930 period Total (3)	Daily (4)	Actual refinery gasoline prod. during Oct. 1, 1929-Apr. 1, 1930 period Total (5)	Daily (6)	Refinery deliveries of gasoline from prod. during Oct. 1, 1929-Apr. 1, 1930 period Total (7)	Daily (8)	Per cent (9)	Estimated gasoline demand upon U. S. refineries during period Oct. 1, 1930-Apr. 1, 1931 Total (10)	Daily (11)
East Coast	4,112,000	9,132,000	5,020,000	27,600	31,408,000	172,600	26,388,000	146,000	13.23	26,301,000	144,500
Appalachian	1,066,000	2,125,000	1,059,000	5,800	7,787,000	42,800	6,728,000	37,000	3.37	6,700,000	36,800
Indiana, Illinois	4,375,000	8,832,000	4,457,000	24,500	33,383,000	183,400	28,926,000	158,900	14.51	28,846,000	158,500
Oklahoma, Kansas	2,937,000	5,124,000	2,187,000	12,000	30,746,000	168,900	28,559,000	156,900	14.32	28,468,000	156,400
Texas	4,087,000	8,208,000	4,121,000	22,600	49,453,000	271,700	45,332,000	249,100	22.73	45,187,000	248,300
Louisiana, Arkansas	1,634,000	2,661,000	997,000	5,400	16,006,000	88,000	15,029,000	82,600	7.54	14,990,000	82,400
Rocky Mountain	1,843,600	3,168,000	1,325,000	7,300	7,248,000	39,800	5,923,000	32,500	2.97	5,904,000	32,400
California	13,052,000	15,978,000	2,926,000	16,000	45,438,000	249,700	42,512,000	233,600	21.33	42,404,000	233,003
Total United States	33,156,000	55,228,000	22,072,000	121,300	221,469,000	1,216,900	199,397,000	1,095,600	100.00	198,800,000	1,092,300
Texas Gulf	3,120,000	6,719,000	3,599,000	19,800	37,111,000	203,900	33,512,000	184,100	16.81	33,418,000	183,600
Louisiana Gulf	1,397,000	2,307,000	910,000	5,000	11,633,000	63,900	10,723,000	58,900	5.38	10,696,000	58,800
Total Gulf	4,517,000	9,026,000	4,509,000	24,800	48,744,000	267,800	44,235,000	243,000	22.19	44,114,000	242,400
Inland Texas	967,000	1,489,000	522,000	2,800	12,342,000	67,800	11,820,000	65,000	5.92	11,769,000	64,700
North Louisiana and Arkansas	287,000	354,000	67,000	400	4,373,000	24,100	4,306,000	23,700	2.16	4,294,000	23,600

METHOD OF DETERMINING CRUDE RUNS TO STILLS BY DISTRICTS BASED ON 40,000,000-BBL. STOCK

(Figures in barrels of 42 gallons)

	Estimated gasoline demand upon U. S. refineries during period Oct. 1, 1930 to Apr. 1, 1931 Total (1)	Daily (2)	Break-up by districts of estimated stocks of gasoline Apr. 1, 1931 (3)	Working stocks of gasoline Oct. 1, 1930 as reported to A.P.I. (4)	Gasoline production in excess of current demand to build up working stocks Oct. 1, 1930 to estimated stocks Apr. 1, 1931 (5)	Total amount of gasoline refineries would have to produce during Oct. 1-Apr. 1 period under ideal stock conditions (6)	Actual stocks of gasoline Oct. 1, 1930 (7)	Excess stocks of gasoline Oct. 1, 1930 (8)	Total amount of gasoline refineries would produce during Oct. 1-Apr. 1 period under actual stock conditions Oct. 1, 1930 Total (9)	Daily (10)
East Coast	26,301,000	144,500	6,643,000	4,696,000	1,947,000	28,248,000	5,425,000	729,000	27,519,000	151,000
Appalachian	6,700,000	36,800	1,324,000	588,000	436,000	7,136,000	1,168,000	280,000	6,856,000	38,000
Indiana, Illinois	28,846,000	158,500	6,015,000	3,925,000	2,090,000	30,936,000	5,462,000	1,537,000	29,399,000	161,000
Oklahoma, Kansas	28,468,000	156,400	3,684,000	1,914,000	1,770,000	30,238,000	3,036,000	1,172,000	29,066,000	160,000
Texas	45,187,000	248,300	6,557,000	4,319,000	2,238,000	47,425,000	5,738,000	1,419,000	46,006,000	253,000
Louisiana, Arkansas	14,990,000	82,400	1,825,000	1,250,000	575,000	15,565,000	1,104,000	—146,000	15,711,000	86,000
Rocky Mountain	5,904,000	32,400	1,766,000	1,173,000	593,000	6,497,000	1,896,000	723,000	5,774,000	32,000
California	42,404,000	233,000	12,186,000	*9,019,000	3,167,000	45,571,000	14,363,000	5,344,000	40,227,000	221,000
Total United States	198,800,000	1,092,300	40,000,000	27,784,000	12,816,000	211,616,000	38,242,000	11,058,000	200,558,000	1,102,000
Texas Gulf	33,418,000	183,600	5,357,000	3,501,000	1,856,000	35,274,000	3,757,000	256,000	35,018,000	193,000
Louisiana Gulf	10,696,000	58,800	1,635,000	1,115,000	520,000	11,216,000	858,000	—257,000	11,473,000	63,000
Total Gulf	44,114,000	242,400	6,992,000	4,616,000	2,376,000	46,490,000	4,615,000	—1,000	46,491,000	256,000
Inland Texas	11,769,000	64,700	1,200,000	818,000	382,000	12,151,000	1,981,000	1,163,000	10,988,000	60,000
North Louisiana and Arkansas	4,294,000	23,600	190,000	135,000	55,000	4,349,000	246,000	111,000	4,238,000	23,000

*Revised.

METHOD OF DETERMINING CRUDE RUNS TO STILLS BY DISTRICTS BASED ON 40,000,000-BBL. STOCK

	Total amount of gasoline refineries would produce during Oct. 1-Apr. 1 period during actual stock conditions Oct. 1, 1930 Total (1)	Daily (2)	Estimated amount of natural gasoline that would be blended at refineries during Oct. 1-Apr. 1 period Total (3)	Daily (4)	Estimated amount of cracked gasoline that would be produced during Oct. 1-Apr. 1 period Total (5)	Daily (6)	Total amount of gasoline refineries would have to produce by straightrun process during Oct. 1-Apr. 1 period Total (7)	Daily (8)	Estimated straightrun gasoline yield (per cent) (9)	Estimated crude oil that would be run to stills during Oct. 1-Apr. 1 period to produce estimated amount of straightrun gasoline Total (10)	Daily (11)
East Coast	27,519,000	151,000	568,000	3,000	14,054,000	77,000	12,897,000	71,000	17.5	73,697,000	405,000
Appalachian	6,856,000	38,000	217,000	1,000	2,580,000	14,000	4,062,000	22,000	28.5	14,253,000	78,000
Indiana, Illinois	29,399,000	161,000	1,285,000	7,000	14,411,000	79,000	13,703,000	75,000	27.0	50,752,000	279,000
Oklahoma, Kansas	29,066,000	160,000	2,420,000	13,000	10,405,000	57,000	16,241,000	89,000	32.5	49,972,000	275,000
Texas	46,006,000	253,000	6,143,000	34,000	20,691,000	114,000	19,172,000	105,000	22.5	85,208,000	468,000
Louisiana, Arkansas	15,711,000	86,000	1,736,000	10,000	6,094,000	34,000	7,881,000	43,000	18.0	43,783,000	240,000
Rocky Mountain	5,774,000	32,000	718,000	4,000	2,987,000	16,000	2,069,000	12,000	26.5	7,808,000	43,000
California	40,227,000	221,000	8,513,000	47,000	7,978,000	44,000	23,733,000	131,000	27.0	87,900,000	483,000
Total United States	(200,558,000)						(99,758,000)				
(40,000,000)	200,600,000	1,102,000	21,600,000	119,000	79,200,000	435,000	99,800,000	548,000	24.1	413,373,000	2,271,000
(35,000,000)	195,800,000	1,076,000	21,100,000	116,000	77,300,000	425,000	97,400,000	535,000	24.1	404,149,000	2,221,000
(45,000,000)	205,400,000	1,129,000	22,100,000	121,000	81,100,000	446,000	102,200,000	562,000	24.1	424,066,000	2,330,000
Texas Gulf	35,018,000	193,000	4,674,000	26,000	16,617,000	91,000	13,727,000	75,000	20.0	68,635,000	377,000
Louisiana Gulf	11,473,000	63,000	1,102,000	6,000	4,498,000	25,000	5,873,000	32,000	20.0	29,365,000	161,000
Total Gulf	46,491,000	256,000	5,776,000	32,000	21,115,000	116,000	19,600,000	107,000	20.0	98,000,000	538,000
Inland Texas	10,988,000	60,000	1,469,000	8,000	4,074,000	23,000	5,445,000	30,000	32.8	16,573,000	91,000
North Louisiana and Arkansas	4,238,000	23,000	634,000	4,000	1,596,000	9,000	2,008,000	11,000	13.9	14,418,000	79,000

(Tables continued on Page 130)

Engineers in Accord on Major Problems

Work of Committees on Standardization of Equipment and Papers Presented Indicate Much Progress Made in Past Year

L. G. E. Bignell
Petroleum Engineering Editor

The eleventh annual meeting of the American Petroleum Institute held in the Stevens Hotel, Chicago, November 10 to 13, inclusive, will go down into the history of the petroleum industry as outstanding in the constructive work accomplished by the various engineering committees. Other general committees likewise did much constructive work during this annual meeting which actually began on Wednesday, November 5, with a committee meeting held by the subcommittee on economic situation.

Other committees met early each day and worked hard and long as many of them continued in session until late at night because of the determination on the part of the chairmen and members to accomplish as much work as possible during this general session.

In many committees, manuals were prepared or recommended and the data contained in these standard forms of reports will be of much value to the industry and will be obtainable through either the New York or Dallas, Tex., offices of the institute. Manuals have been printed on Disposal of Refinery Wastes, and others covering the subjects of disposal of wastes in the production and marketing departments of the industry are being prepared.

Likewise the committees on fire prevention in refineries, marketing and production are each preparing manuals for their divisions which will be of great value, as the recommendations given are all based upon proven practices that have been in actual operation by many of the major companies.

Such work is invaluable if the industry will only make use of it, for it is only by such co-operation that these data can be assembled and made available for call, and it is hoped that member companies of the A.P.I. will secure copies of these manuals as soon as available and put the recommendations contained therein into practical use.

Equipment Committees Busy

What has been said about the general committees of waste and fire prevention will also apply to the committees handling details of standardization of oil field equipment. This work is much further along than that mentioned above but there are still details to be ironed out and the manner in which the many suggestions submitted to these committees was handled indicates quite clearly that they have an intimate knowledge of their problems and practical suggestions for their solutions.

It is true that in some of these committee meetings a few details were left open because of the lack of fundamental data, but as much of this type of information is not at this time available no other course was possible.

To overcome this condition, however, several of the committees made definite recommendations to the executive committee of the institute that steps be taken to assemble these data as quickly as possible and the committee of the board on fundamental research has authorized the raising of $100,000 by requesting contributions from individual oil companies and it is anticipated that this money will be made available to continue the work now being done under the fund provided by John D. Rockefeller and the Universal Oil Products Co.

The work now being carried on under this Rockefeller-Univeral Oil Products fund will be finished on June 30, 1931, at which time the five-year time limit expires, and because of the fact that the utilization of much of these data cannot be made possible without further work along the several lines now being followed in these investigations it was the recommendations of the advisory committee on fundamental research for the pro-

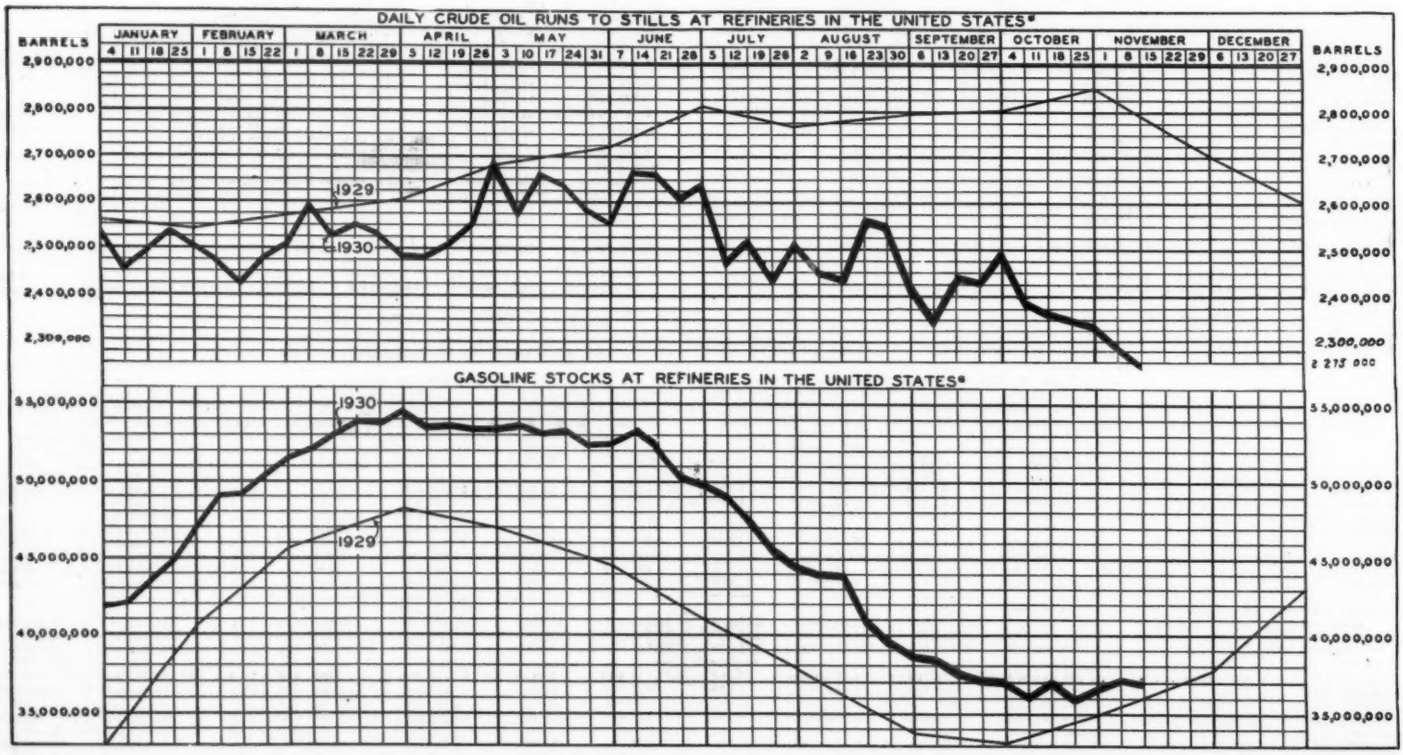
(Continued on Page 63)

AMERICAN PETROLEUM INSTITUTE WEEKLY REFINERY STATISTICS

The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to stills, gasoline stocks and gas and fuel oil stocks in barrels—for the week ending November 15.

	Week Ending November 15				Week ending November 8				Week ending January 4			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	461,400	5,642,000	11,936,000	100.0	482,000	5,705,000	11,878,000	100.0	454,857	5,998,000	7,431,000
Appalachian	93.2	68,600	802,000	1,016,000	93.2	73,400	824,000	990,000	91.6	75,571	1,282,000	805,000
Indiana, Illinois, Kentucky	97.5	254,700	4,349,000	3,858,000	97.5	236,900	4,471,000	3,946,000	98.6	289,800	5,483,000	3,505,000
Oklahoma, Kansas, Missouri	89.4	265,400	2,187,000	4,615,000	89.4	248,100	2,215,000	4,577,000	87.7	263,428	3,604,000	3,277,000
Texas	91.9	514,600	6,752,000	10,772,000	91.9	522,300	6,450,000	10,558,000	90.7	539,857	6,590,000	13,757,000
Louisiana and Arkansas	98.3	164,000	1,207,000	2,054,000	98.3	148,600	1,217,000	2,062,000	96.8	160,000	2,161,000	4,499,000
Rocky Mountain	93.1	46,000	1,472,000	1,014,000	93.1	44,300	1,532,000	1,027,000	93.3	41,614	2,273,000	973,000
California	98.8	518,000	14,851,000	104,534,000	98.3	519,000	14,598,000	103,982,000	99.3	642,857	14,826,000	109,770,000
Total United States	95.7	2,292,700	37,263,000	139,799,000	95.6	2,274,600	37,012,000	139,020,000	95.4	2,468,285	42,217,000	144,017,000
Texas Gulf Coast	100.0	386,700	5,539,000	8,006,000	100.0	410,300	5,242,000	7,787,000	100.0	429,585	5,579,000	10,792,000
Louisiana Gulf Coast	100.0	103,400	973,000	1,109,000	100.0	106,300	991,000	1,105,000	100.0	103,514	1,877,000	3,818,000

(1) Per cent of refinery capacity represented. (2) Daily crude runs to stills. (3) Gasoline stocks. (4) Gas and fuel oil stocks.



Data for 1930 based on weekly reports of the American Petroleum Institute. Data for 1929 derived from monthly reports of the Bureau of Mines, Department of Commerce. Figures for last week not shown in graph but are included in above tables.

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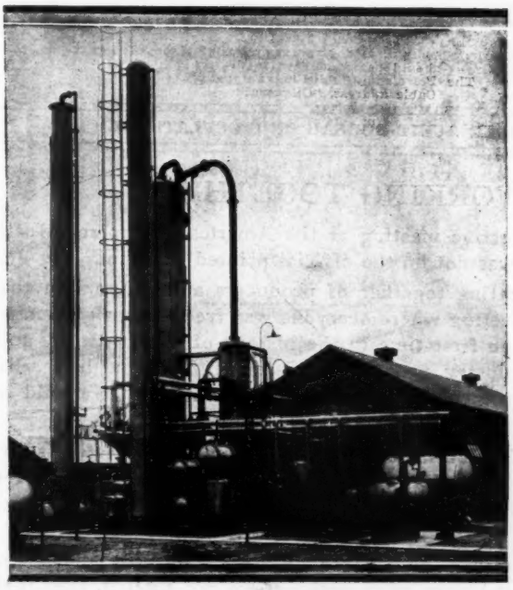

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WORKING TOGETHER

The most effective meeting at the American Petroleum Institute in Chicago was not on the official printed program.

It was the getting together of producers and refiners in that Monday night meeting where everyone was free to speak his mind and where, for the first time in the history of the Institute, and, indeed, of the industry, producers and refiners, big and little, discussed together the condition of the business and what should be done about it.

The Oil and Gas Journal had a vision of some such meeting seven years ago when it urged a realization of the essential unity of the industry upon the various branches of the industry in the following words (May 24, 1923):

"Producers, refiners and marketers are seeing that knowledge of their particular branch of the business is not enough, that they must study the problems presented to the industry at large. The producer must inform himself of the conditions of consumption; the refiner must follow both production and consumption."

That was written, it must be remembered, long before there was any thought or prospect of co-operation among producers on curtailment. At that time the common idea seemed to be that the interests of producer and refiner were antagonistic, that one wanted cheap crude and the other did not. But both have learned a lot in the expensive school of experience since that day.

The revolution in producing methods and manufacturing processes in those seven years has been matched by a revolution in the viewpoint of the individual members of the industry. Hard facts have hammered home the conviction they are all in the same boat.

The open meeting at Chicago was the culminating demonstration of that realization. It stood out starkly in every word spoken.

These men had been brought together by a common crisis and the anxiety to deal with it. There was no waste of words in oratory, no mouthing of platitudes or mumbling of generalities.

The sense of solidarity was shown in the total absence of any attempt at fault finding or blame shifting. Everyone seemed to feel the need of everyone else if the industry was to get out of the hole in which it finds itself.

The meeting was remarkable, not only for having producers and refiners discussing the position of the industry from a common standpoint, but for the subordination of criticism to the single purpose of securing effective action.

An illuminating illustration of the earnestness and directness of the meeting was seen in the sudden clarification of the discussion of how to get gasoline stocks to the 40,000,000-barrel limit by April 1.

A speaker pointed out that gasoline stocks are now at that figure and all that is needed is to have each refiner limit his operations to current demand from now until March 31.

The producers of crude, overwhelmed by potential production and price cuts, pledged themselves ready to make what further curtailment might be necessary to carry out the program formulated by the Economic Committee.

There can be no question of their determination and ability to put it into effect, no matter what future obstacles may arise, just as past difficulties have been overcome by the resolute co-operation of the great mass of producers.

This persistence of the producers in what they believe to be the only program that will carry the industry through is the more remarkable in view of the fact that, because of the demoralization of the gasoline market by overproduction, they have been denied their share of the advantages which should accrue from co-operation.

It would have been foolish, but very human, if some producer had arisen in that Chicago meeting to declare that he was through with trying to curtail when the refining industry was persisting in breaking his market through overproduction of gasoline.

Instead, the producers, having had their own difficulties in winning co-operation, sympathize with the refiners who are having like troubles in securing co-operation in refinery curtailment.

How big that job is may best be measured by the startling fact revealed by the Institute's questionnaires that the refiners collectively appear to be contemplating an aggregate run to stills during the winter of 491,000,000 barrels and an accumulation of 52,127,000 barrels of gasoline by April 1, contrasted with the 413,373,000 barrels run to stills limit set by the Economics Committee to arrive at 40,000,000 barrels of gasoline by that date.

This amazing contrast between imagination and reality is intensified when it is noted that the refining program, indicated by the questionnaires to be the intention of the refiners collectively, is based upon the notion that there will be a 14.25 per cent increase in demand for gasoline this winter over last, notwithstanding the condition of general business and the decline in rate of increase in demand during the previous six months.

If, on the other hand, as seems more likely, there should be an approximate break even between this winter's consumption and last winter's that refining program would mean an accumulation by April 1 not of 52,000,000 barrels of gasoline but of 78,000,000 barrels of gasoline, worse even than the 55,000,000 surplus of last April which demoralized the markets this year.

After that showing in the Chicago meeting surely it is impossible to imagine any such refining expansion, so plainly suicidal.

There may of course be some so lacking in common sense as to ignore the plain facts in the situation set out by the reports of the two committees on economics, one by the Government and the other by the Institute, but that should not deter the vast bulk of the refining industry from following the simple course expressed in the declaration that from now until March 31 each refinery should limit its operations to current needs and thereby assure that stocks by April 1 shall not exceed the maximum of 40,000,000 barrels.

The producers of crude have shown how it can be done, how the weight of considered opinion can make its influence felt constructively and conclusively. The same determination and action can be successful if evoked by the refiners.

Evasion of the plain chart marked out at the Institute meeting will simply be flying in the face of the facts and inviting the consequences that will inevitably follow next summer.

Happily that getting together at Chicago can not soon be forgotten. It was, it is to be hoped, the first of many such meetings where the oil industry will come together to talk over its difficulties frankly and freely and find a solution in common agreement and united action.

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Study Chemistry of Organic Sulphur

Catalytic Reactions of Compounds Outlined. Conclusions Reached Theoretically Are Substantially Confirmed Experimentally

By Hugh S. Taylor*

ABSTRACT

A general survey of the problem of the reactivity of sulphur compounds present in petroleum when brought to reaction in presence of contact agents has been given. It has been shown that much can be predicted as to results from analogy with the known reactions of organic compounds of similar types, but containing oxygen or nitrogen in place of sulphur. The conclusions thus reached theoretically are substantially confirmed experimentally by work in progress on Project No. 40 of the American Petroleum Institute research program. The variations attributable to temperature, pressure, catalyst and reacting gas are summarized; and the importance of the type of the sulphur compound treated, as determining the ease and extent of removal, is indicated.

Sulphur compounds in petroleum constitute at present one of the major problems of the petroleum industry alike in the producing, the refining and the consuming branches of the business. The mounting production of higher sulphur crudes suggests that the importance of the problem may increase still further rather than diminish. There are various aspects to the problem involving, for example, corrosion both in production and consumption, which latter corrosion suggests the desirability of efforts for the elimination of the sulphur content of the petroleum during the refinery treatment.

The developments in refinery technique during the last decade or two have served to demonstrate the variety of behavior shown by sulphur compounds present in petroleum when subjected to various refinery methods of operation. It is well known how, in straight distillation of petroleum hydrocarbons, the successive fractions reveal each their quota of sulphur compounds present. It is known also that in the liquid-phase process of cracking, while modification of sulphur content does occur, much of the original content of sulphur is to be found in the lower boiling distillates. The recent developments in vapor-phase cracking of petroleum suggests a striking divergence from the behavior in liquid-phase cracking in that claim is made that, in vapor phase processes, the elimination of sulphur compounds as hydrogen sulphide attains major proportions. The same claim of a high degree of sulphur elimination is made in the newly developed method of treating liquid petroleum products at high pressures of hydrogen, with catalysts and under varying conditions of control, the process now known as oil hydrogenation.

Meager Data

It is striking that, in a field of this importance, the fundamental scientific data relative to the sulphur compounds in

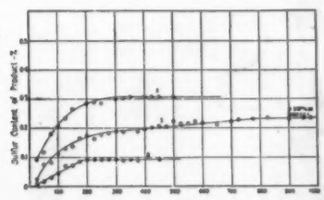

Figure 1—Removal of sulphur from naphthas in vapor form in contact with metallic nickel catalysts with no hydrogen added. Temperature, 300° C. Curves 1, 2, and 3 show the results with naphthas 1, 2, and 3, respectively. The initial sulphur contents were 0.410 per cent, 0.278 per cent, and 0.357 per cent, respectively.

petroleum and their reactions are so very meager. The presence of certain types of sulphur compounds in petroleum sources and products is known, but knowledge of individual compounds present is almost entirely lacking. The number of carbon-sulphur compounds prepared, isolated and defined in properties is small compared with the vast literature of carbon compounds in which oxygen, nitrogen and hydrogen are the concurrent elements. The reactivity of such sulphur compounds under varied conditions of temperature, pressure, reaction and contact agents is but scantily known even in the case of individual compounds, and much less so in the case of natural products which may contain such sulphur compounds in complex mixtures. This, therefore, constituted a field to which the attention of those responsible for fundamental research in connection with the American Petroleum Institute's program had inevitably to be directed. The present communication records some of the conclusions to which researches conducted under the above auspices are leading (Project No. 40, American Petroleum Institute research program), and outlines some of the directions in which the work is being extended.

It has already been noted that the sulphur compounds present in petroleum possess a degree of stability when subjected to conditions operative in straight petroleum distillation; but that in the altered conditions, mainly of high temperature, present in vapor-phase cracking, a marked conversion of sulphur compounds to hydrogen sulphide occurs. It is well known that appreciable reduction in reaction temperatures of many processes can be secured by the use of contact agents in a variety of chemical processes, the discovery and employment of which agents constitute the field of so-called catalytic investigation. The addition and removal of hydrogen from chemical compounds, hydration and dehydration, processes of decomposition, condensation and polymerization are all processes for which catalysts have been found to secure the smoother and more efficient operation of the desired reaction at temperatures lower than this could be secured without the aid of such contact agents. How little attention has been paid to the corresponding reactions involving addition or removal of sulphur to or from organic compounds may be instanced by the fact that in the standard text of the subject (Sabatier-Reid, Catalysis in Organic Chemistry; D. Van Nostrand Co.) there are in the subject index only two references to the addition of sulphur and one to the removal of sulphur in a book of 350 pages and containing some 7,000 entries in this same subject index. This observation demonstrates the lack of attention that has obtained with reference to this subject of essential importance today to the petroleum refiner.

Application of Catalysts

The application of catalysts to the treatment of sulphur compounds has probably been delayed by the well-known effect of sulphur compounds as poisons to catalysts being operated for the promotion of other reactions. Thus, for example, it is known that the presence of 0.01 per cent of sulphur compounds in a mixture of carbon monoxide and hydrogen will effectively destroy the activity of a nickel catalyst in the conversion of these reactants to methane. Similarly, the presence of traces of thiophene in benzene prevents the catalytic addition of hydrogen to benzene to form cyclohexane. It is probably from such experience that the impression has become general that sulphur compounds and active catalytic agents were incompatibles. A more extended acquaintance with the theory and technique of catalysis would show, however, that the problem is not so insuperable as might at first be believed. The examples of poisoning already cited are cases in which very efficient catalytic agents are required, in which only minute and localized areas of the catalyst are active in securing the hydrogenation process in question. With such processes the problem of poisons is acute. But there are a variety of catalyzed reactions, relatively easily accomplished, in which the presence of these same sulphur compounds is a matter of quite secondary import. Thus, it requires the presence of a very liberal amount of sulphur compounds to suppress the reduction of nitrobenzene by hydrogen in the presence of catalytic nickel. Furthermore, it is known that, as the operating temperature is raised in a particular catalytic process, the relative importance of the poison becomes, in

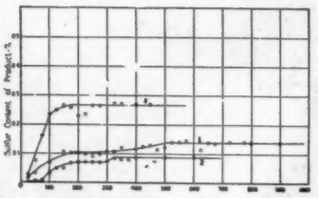

Figure 2—Removal of sulphur from naphthas in vapor phase by metallic nickel catalysts when hydrogen is added. Temperature, 300° C. Curves 1, 2, and 3 are for naphthas 1, 2, and 3, respectively. The initial sulphur contents were 0.410 per cent, 0.278 per cent, and 0.357 per cent, respectively.

many cases, progressively less; so that quite frequently the accidental introduction of catalyst poison can be overcome by a moderate rise in operating temperature. It may be useful to point out at this juncture that a corresponding ameliorative effect can be secured by elevation of hydrogen pressure (in a catalytic hydrogenation) without change in temperature. These beneficial effects of temperature and pressure elevation are attributable to the increase which they effect in the available catalytic surface. At the higher temperature a greater fraction of the total surface is capable of effecting the reaction in question. At elevated pressures, if the poisoning is reversible, the extra partial pressure of the hydrogen involves that a greater fraction of the total reacting surface is free from poison. Thus, water vapor is a reversible poison for iron in the synthesis of ammonia by reason of the formation of an oxide film on the surface. With a given ratio of hydrogen to water vapor, the surface attains an equilibrium expressi ble by an equation:

$$Fe_xO_y + yH_2 = xFe + yH_2O$$

It is evident that an increase in hydrogen-water ratio by increase of hydrogen pressure will operate in favor of an increase of available catalytic iron surface with a given partial pressure of water vapor. Transposing this to the case of hydrogen sulphide as a poison to nickel, it is evident that, with a constant

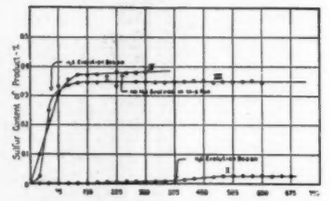

Figure 3—Effect of contact with initially sulphur-free nickel catalysts in vapor phase on sulphur content of naphtha containing butyl mercaptan or thiophene. Curve I: Naphtha solution of butyl mercaptan, initial sulphur content of 0.375 per cent. Curve II: Naphtha solution of thiophene, initial sulphur content of 0.388 per cent. Curve III: Naphtha solution of thiophene, initial sulphur content of 0.388 per cent, hydrogen added. Temperature 300° C. in each case.

concentration of sulphur compound (determined, for example, by the sulphur content of an oil to be hydrogenated), the availability of active metal in a nickel surface will increase with increasing hydrogen pressure by reason of the operation of the surface equilibrium:

$$NiS + H_2 = Ni + H_2S$$

Utilization of Higher Pressures

For this reason it is only a logical deduction from well-known chemical principles that the utilization of higher pressures of hydrogen in the hydrogenation of coal, oil and other substances will tend to minimize the troublesome problems of sulphur poisoning. It is to the operation of this influence that the success reported in the treatment of high sulphur oils and coals in processes of high-pres sure hydrogenation is to be attributed.

The paucity of data relative to the reactions and behavior of sulphur compounds in the presence of contact agents requires that in the preliminary analysis of the problem reliance be placed on analogous reactions with compounds of similar types but containing other elements than sulphur. Thus, while data for the mercaptans, thio-alcohols, are conspicuously lacking, a wide variety of investigations deals with the reactions of alcohols. While little is known concerning the sulphides, much has been learned concerning the ethers, the oxygen analogs. While the poisoning action and resistance of thiophene to the decomposition constitute our principal knowledge of cyclic sulphur compounds in presence of contact agents, much is known concerning the contact actions to be secured with cyclic nitrogen compounds such as pyridine, pyrrol and the like. It is the reactions of these analogous compounds which must form the starting point for scientific attack on the problem of contact reactions of the sulphur-containing

(Continued on Page 131)

*Director, Project No. 40, professor of physical chemistry, Princeton University, and chairman of the central petroleum committee, National Research Council. Presented at eleventh annual meeting, American Petroleum Institute, at Chicago, Ill., November 13, 1930. This paper summarizes the results to date of an investigation on specific adsorbents for sulphur compounds in petroleum, listed as Project No. 40 of American Petroleum Institute research. Financial assistance in this work has been received from a research fund donated by John D. Rockefeller. This fund is being administered by the American Petroleum Institute with the co-operation of the central petroleum committee of the National Research Council.

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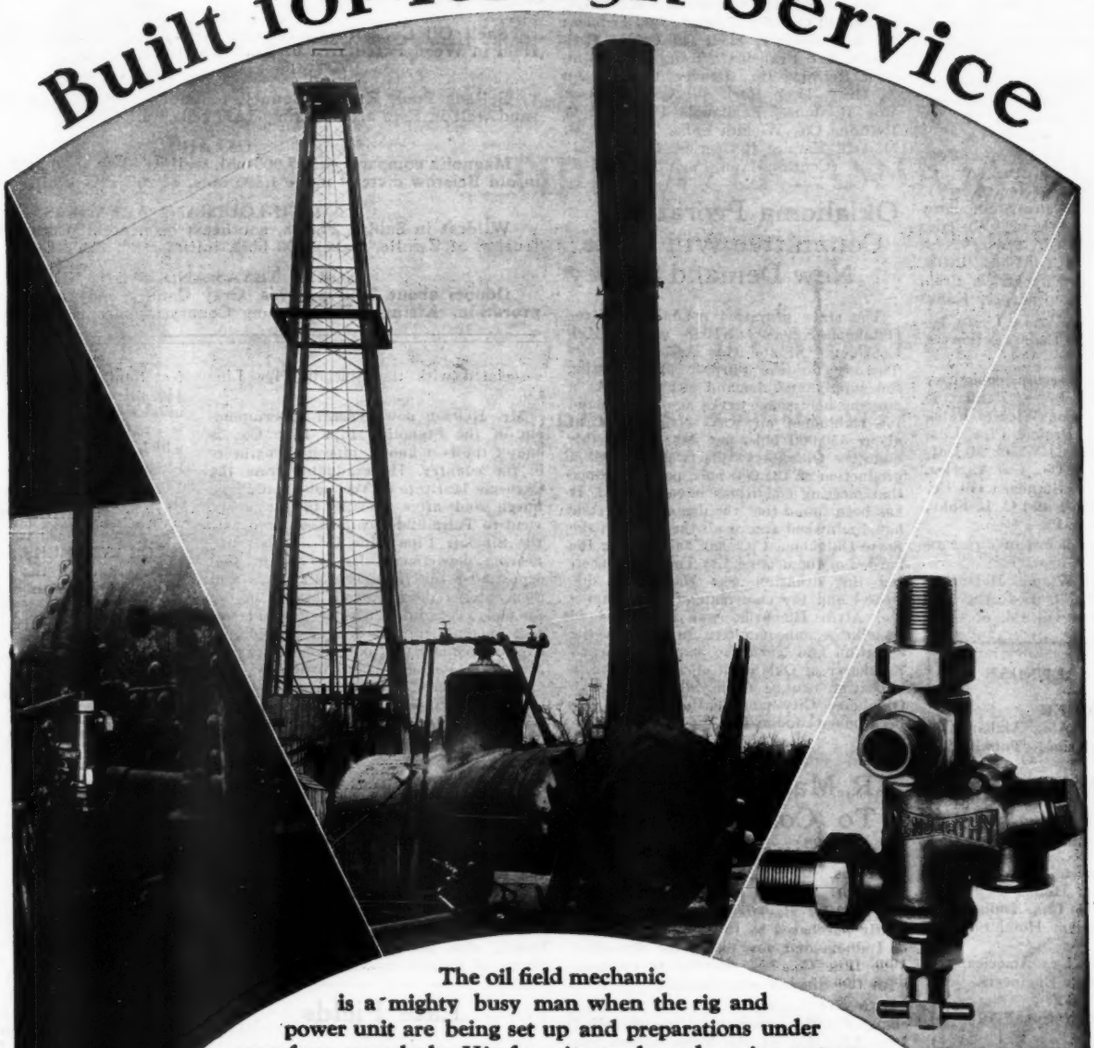

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The following executive committee was elected: The president, vice presidents, treasurer, last retired president (E. W. Clark, Union Oil Co. of California, Los Angeles, Calif.), and J. Howard Pew, Sun Oil Co., Philadelphia, Pa.; W. C. Teagle, Standard Oil Co. (New Jersey), New York; Herbert L. Pratt, Standard Oil Co. of New York; H. F. Sinclair, Sinclair Consolidated Oil Corp., New York; F. A. Leovy, Gulf Oil Corp., Pittsburgh, Pa.; and W. S. Fitzpatrick, Prairie Oil & Gas Co., Independence, Kans.

Robert R. Penn and A. L. Beaty become directors through their election as officers.

The following membership committee was elected: Roy B. Jones, Panhandle Producing & Refining Co., Wichita Falls, Tex.; C. H. Kountz, Prairie Pipe Line Co., Independence, Kans.; W. C. McDuffie, Pacific Western Oil Co., Los Angeles, Calif.; W. T. Holliday, Standard Oil Co. of Ohio, Cleveland, Ohio; and C. L. Suhr, Pennzoil Co., Oil City, Pa.

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(Continued on Page 132)

OIL MAN'S CALENDAR

NOVEMBER

21—Birmingham, Ala., Alabama Oil Men's Association, Tutwiler Hotel.

DECEMBER

1-5—Memphis, Tenn., ninth annual Asphalt Paving Conference, Hotel Peabody.

2-4—Omaha, Neb., convention, Nebraska Independent Oil Men's Association, Paxton Hotel.

3-4—Indianapolis, Ind., Indiana Petroleum Association, Hotel Severin.

8—New Orleans, La., American Institute of Chemical Engineers.

JANUARY

3-10—New York, National Automobile Show.

10-16—St. Louis, Mo., twenty-eighth annual convention, American Road Builders Association.

14-15—Minneapolis, Minn., Minnesota division, Northwest Petroleum Association, Radisson Hotel.

19-23—Detroit, Mich., annual meeting, Society of Automotive Engineers, Book-Cadillac Hotel.

24-31—Chicago, National Automobile Show.

29-30—Grand Forks, N. Dak., North Dakota division, Northwest Petroleum Association, Dacotah Hotel.

FEBRUARY

16-21—San Francisco, National Western Metal Congress and Exposition.

MARCH

19-20-21—San Antonio, Tex., American Association of Petroleum Geologists, Gunter Hotel.

MAY

4-9—Charlotte, N. C., Good Roads Convention.

Oklahoma Proration Committee Will Make New Demand Survey

The state proration committee of the Oklahoma-Kansas division of the Mid-Continent Oil and Gas Association met Tuesday for the purpose of discussing the supply and demand situation. At a meeting held some weeks ago the demand for Oklahoma oil was settled upon at about 550,000 bbls. per day and of this quantity Oklahoma City was allowed a production of 131,000 bbls. per day. Since that meeting conditions have changed. It has been found that the demand for crude has diminished and of all the fields in the State Oklahoma City has had to bear the burden of the decline. At Tuesday's meeting the situation was thoroughly discussed and the chairman of the committee, Alvin Richards, was instructed to appoint a subcommittee to canvass the situation and learn the demands of each purchaser of Oklahoma oil so that a new allocation can be made, which will give Oklahoma City more outlet than it has been given under the present proration plan.

J. R. Manion Resigns; To Continue With Sinclair Company

John R. Manion, for many years president of the Sinclair Pipe Line Co., recently purchased by the Standard Oil Co. of Indiana and now called the Stanolind Pipe Line Co., has resigned to continue with the Sinclair organization.

Effective November 15, the following changes in the personnel of the Stanolind Pipe Line Co. at the Tulsa offices are announced by the board of directors of the company: President, R. S. Ellison; vice president and director, B. P. Sibole; secretary and treasurer, A. L. Carlson; general superintendent, W. G. Heltzel; chief engineer, C. M. Scott, Jr.; general auditor, J. L. Shoemaker; general attorney, Clay Tallman; and in charge of purchases, W. L. James.

Messrs. Ellison, Carlson, Tallman and James also held similar positions with Stanolind Crude Oil Purchasing Co.

John R. Manion has been elected president of the Sinclair-Texas Pipe Line Co., the Pierce Pipe Line Co. and the Consolidated Pipe Line Co., with A. D. Sloan, vice president; Frank Hadley, vice president, and R. B. Hanna, secretary-treasurer.

Mr. Sibole, new vice president and director of the Stanolind Pipe Line Co., is a graduate of the University of Pennsylvania. He went with the Pierce Arrow Motor Car Co. after leaving college and became connected with the Sinclair Oil & Gas Co. in 1920. He remained with that company one year and then became associated with the Sinclair Pipe Line Co.

Mr. Heltzel, now general superintendent of the Stanolind Pipe Line Co., is one of the best known pipe line engineers in the country. He graduated from the Carnegie Institute of Technology at Pittsburgh and after serving in the army, went to Tulsa and became associated with the Sinclair Pipe Line Co. in the engineering department. He served in that department for three or four years and then entered the operating branch of the company, remaining with it until his recent appointment. He is a member of the national committee on corrosion of the American Petroleum Institute and the author of many articles on subjects relating to the pipe line industry which are regarded as veritable text books on these subjects.

HEADS OIL AND GAS COMPANY

Henry L. Phillips, formerly president of the Sinclair Crude Oil Purchasing Co., has been elected president and director of the Sinclair Oil & Gas Co., to succeed the late R. A. Griffith. Herbert B. Smith, vice president and director, has been placed in charge of operations; W. W. Baker, vice president and director in charge of natural gasoline operations.

High Spots in Field News

GULF COAST

Lockport extension more promising. Good producers at Barbers Hill.

ROCKY MOUNTAIN AREA

Hobbs Pool discovery well deepened, rated 7,646 bbls. New test in Utah.

EAST CENTRAL TEXAS

Joiner Pool may not be major Woodbine Pool. Production likely to be erratic.

SOUTHWEST TEXAS

Wildcat gas well in Jim Wells County. New sand in south end of Cole County gas field.

WEST TEXAS

Howard County well has 1,600 feet of oil in hole. Scarborough and O'Brien Pools extended.

CALIFORNIA

Shell Oil Co. wildcat, flowing 1,500 bbls. of 22 gravity oil, opens new field in Weed Patch area of Kern County.

KANSAS

Sellens Pool, Russell County, extended. Mid-Kansas company got deep sand well in Ritz area making 3,327 bbls. in 24 hours.

OKLAHOMA

Magnolia company gets 7,000-bbl. well in stray sand at Konawa. New well in old Bristow district made 1,500 bbls. of 20 gravity oil.

NORTH-LOUISIANA-ARKANSAS

Wildcat in Sabine Parish, southeast of nearest production in eastern extension of Zwolle, makes 600 bbls. initial from 2,392 feet.

NORTH TEXAS AND PANHANDLE

Doubts about Sullivan area, Gray County, may avoid need for separate proration. Kisinger Pool, Young County, apparently defined.

Late Fields

NORTH LOUISIANA-ARKANSAS

SHREVEPORT, La., Nov. 18.—Sabine Syndicate's No. 1 Pearce, SE SW, Section 10-7-11, Sabine Parish, was completed making 600 bbls. initial from 2,392 feet total depth. The well is a wildcat, 1¼ miles southeast of nearest production in the eastern extension of Zwolle and is producing from the Zwolle marl from which the eastern extension wells are producing at around 2,450 feet.

CALIFORNIA

LOS ANGELES, Calif., Nov. 18.—Perseverance of the Shell Oil Co. in its attempt to discover a new oil field in the Weed Patch area of Kern County in the face of two dry holes was crowned with success when No. 1 Porter Day, a wildcat, was brought in flowing 1,500 bbls. of clean 22 gravity oil per day from 5,790 feet. This well, which had previously failed to result in commercial production on a test higher up in the hole, definitely proves the existence of a new oil field in wildcat territory about 10 miles southeast of Bakersfield. It is flowing through a five-eighths-inch bean under a pressure of 950 pounds. The hole was originally bottomed at 5,962 feet but was subsequently plugged back to 8,790 feet and finished with an 8⅝-inch oil string.

Most of the acreage in this section is held in large blocks and while this precludes competitive drilling several additional holes will be started in the near future due to lease requirements. The Shell recently turned over one of its leases to the Mohawk Oil Co. and this concern, which is already making hole in its original tests, seems practically assured of production. The Standard Oil Co. also has some prospective acreage tied up in this area but its potentiality is at present conjectural.

The discovery of a new oil field in the

(Continued on Page 136)

SCORE SHEET ON OIL PRODUCTION

Below is shown allotted average daily production in the United States from October 1, 1930 to April 1, 1931, suggested by the American Petroleum Institute's special committee on the economic situation, and the actual daily average production during the week ending November 15:

	Allotted (bbls.)	Actual (bbls.)	Over (bbls.)	Under (bbls.)
Okla., Kans., S. W. Tex., North Tex.	953,700	937,260	....	16,440
West Texas and New Mexico	316,300	319,648	3,348	.....
North Louisiana-Arkansas	86,400	95,980	9,580	.....
Gulf Coast	177,800	180,479	2,679	.....
Rocky Mountains	58,600	58,057	....	543
California	530,100	601,500	71,400	.....
Other fields	110,600	113,000	2,400	.....
Total	2,233,500	2,305,924	89,407	16,983

Net average daily overproduction 72,424 bbls.

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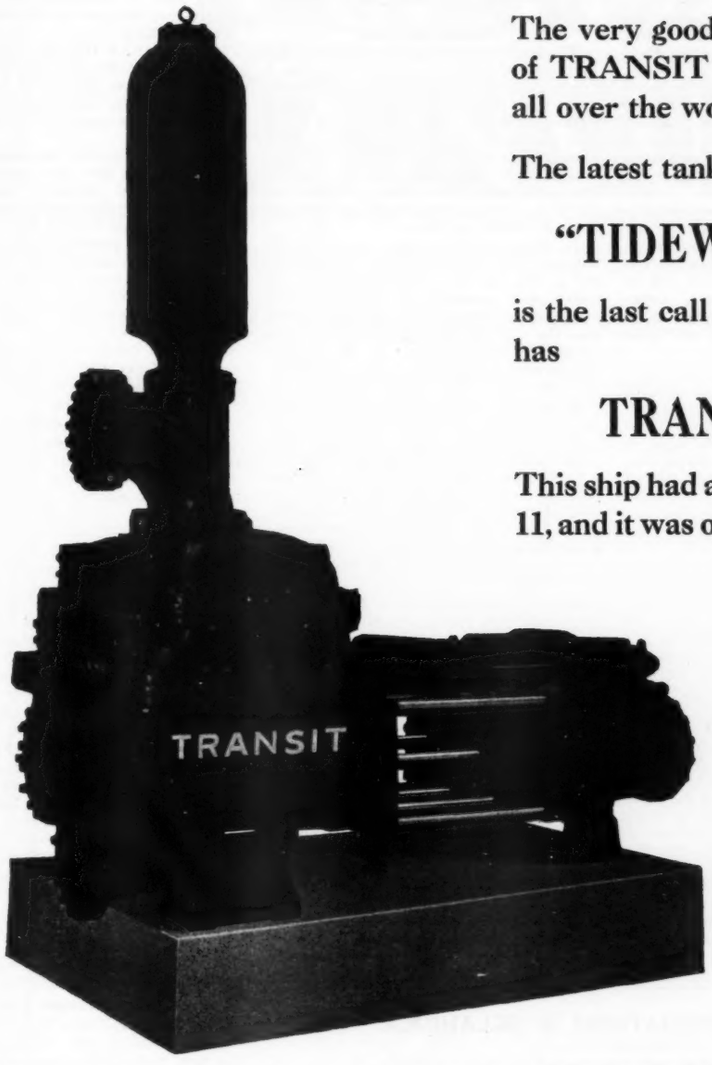

The very good reason is because literally hundreds of TRANSIT Pumps are making good on tankers all over the world.

The latest tank ship

"TIDEWATER ASSOCIATED"

is the last call in tanker construction and of course has

TRANSIT CARGO PUMPS

This ship had a most satisfactory sea trial September 11, and it was our privilege and pleasure to be aboard at this trial.

"TIDEWATER ASSOCIATED" is driven by one of those wonderfully balanced Sun-Doxford opposed piston reversible oil engines. The operation is so smooth and the vibration so slight, that we thought we were on a turbine driven ship. And they told us that for thermal efficiency, these Sun-Doxfords just draw rings around any other type of ship drive.

But we are digressing—the point is: "TIDEWATER ASSOCIATED" has—

2—20 x 16 x 24″ Horizontal Duplex Transit Pumps as main Cargo Pumps

and

1—12 x 8 x 12″ Vertical Duplex Transit Stripper Pump

and we are proud to have them on so fine a ship. We have pumps of all approved types for tankers.

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Frick-Reid Supply Corporation

NEW ORLEANS, LA.
Woodward, Wight & Co.

SALT LAKE CITY, UTAH
F. C. Richmond Machinery Co.

LOS ANGELES
Republic Supply Company of California

BEAUMONT, TEXAS
E. L. Wilson Hardware Company

PHOENIX, ARIZ.
Pratt-Gilbert Co.

ST. LOUIS, MO.
Reeves & Skinner Machinery Co.

Work Slows Up in Oklahoma City

Peak of Field Operations There May Have Been Passed. Production in Oklahoma Increased to 506,000 Bbls. a Day

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

The production of Oklahoma had a substantial increase during the week ending November 15, when 16,000 bbls. a day was added to the production of the previous week. The daily average was approximately 506,000 bbls.

Oklahoma City shows an average of approximately 85,000 bbls. for the week ending November 15. Many of the late completed wells in the field are underproduced and the operators are cooperating with the pipe line companies in shutting down the wells that have had their share or more of production until the underproduced wells have caught up.

The construction work on the new Sinclair Texas Pipe Line Co.'s 155-mile 12-inch crude line will give the Oklahoma City Field another pipe line outlet when it is completed November 20. The pipe line begins at the company's tank farm southwest of the Oklahoma City Pool and connects with the company's refineries at Sand Springs, Okla., and Coffeyville in southeastern Kansas. The line has a capacity of approximately 60,000 bbls. a day.

Insurance Companies Balk

The Oklahoma Corporation Commission is expected to prepare an order in the near future to force all oil operators in the Oklahoma City Pool to have equipment adequate to safeguard life and property in the future, before bringing in new wells in the area surrounding the city.

The order is based on information from the insurance companies which are refusing to write new policies in the city's wholesale district and the threat of cancellation of the existing policies. It is believed the stand of the insurance men grew out of the dangers of wild wells showering ground and buildings with oil and gas, creating a grave insurance risk.

Phillips Petroleum Co., one of the active operators in the Oklahoma City Field, announced during the week that it indefinitely shut down on all of its locations not now drilling. The order includes nine operations from locations to tests that were rigging up in the north end of the field. A few of these tests are offsets to producing wells.

Other companies are expected to begin shutting down new work in the Oklahoma City Field while some of the companies have failed to make any new locations during the last couple of months.

The commission's proposed order provides for the creation of a commission of probably three members now employed in the Oklahoma City Field to serve without pay in a supervisory capacity. Under the proposed order the operators about to bring in new wells would be required to advise the commission of the fact and then shut the test down until the commission acts on reports on the adequacy of the equipment. Before the Oklahoma City Field can return to normalcy in producing oil, it is estimated that 2,500,000 bbls. of storage oil and underproduced crude from completed wells in the field must be moved. This stock of oil resulted in additional restrictions to the present proration schedule which allows the present even-produced wells four hours open flow out of each 12-day period and limiting the new wells to an eight-hour open flow test, instead of 16 hours. It is believed little headway has been made in emptying lease storage and getting the underproduced crude out of the ground. The proration in the field has been reduced and some of the companies are only producing their edge wells and shutting down the inside wells.

Big Field Over the Peak?

Field work has been slow during the last couple of weeks and the drilling operations in the Oklahoma City Field indicate the peak is a matter of history. Many express the opinion, only the north and northwest sections of the field are yet to be developed. Only one producer was completed in the field up to Tuesday, several others were connecting and drilling out cement plugs on the last string of casing.

Work is under way on several gathering lines that are being laid to the tank batteries by different pipe line companies and with the completion of these lines it is believed a large amount of oil will be removed from the field storage tanks and later give the underproduced wells a chance to get even with the proration schedule.

During the week the Century Petroleum Co. purchased the half interest of the Spears Drilling Co. in the lease and drilling test on the Wheeler School Land in the SW NW SE, Section 10-11-2w, in the northwest of the Oklahoma City Field. The Century Petroleum Co. also acquired two strings of tools, and in the future will drill its own tests. The company is now a complete unit having its own pipe lines and refinery.

Most of the wildcat tests in Oklahoma County are shut down. The Mid-Kansas Oil & Gas Co.'s No. 1 Messer, SW cor.. Section 32-14-3w, is idle and many express the opinion that other tests in the area may be delayed until next spring.

The Mid-Kansas Oil & Gas Co.'s No. 1 Ball, NW cor. NE, Section 19-12-1w, in the Nicoma Park district, was showing a small amount of oil while cleaning out at a total depth of 6,171 feet. The sand was found at 6,163 feet. It is expected to be drilled a few feet deeper when it is possible to get the tools on bottom. It offsets the discovery well in the area and is being drilled on a block of 10,000 acres controlled by the company.

The wildcat location of Standish, McCluney & Wade has been taken over by J. A. Standish and operations will be resumed. The test is No. 1 Hinkle, C NE SW, Section 27-11-3w, and is located about 2 miles southeast of the production in the Oklahoma City Field. The location has been shut down since the first of the year.

Leasing Is Quiet

The leasing of acreage in Oklahoma has been quiet during the last few months. A recent sale of acreage in the Seminole district was held by the Shawnee Indian agency and the Shell Petroleum Corp. paid the largest bonus for a 40-acre lease described as the N half N half SW Section 31-9-5, Seminole County, in the Earlsboro area. The price paid was $75 an acre. Other acreage sold for bonuses from $1 to $10 an acre.

In Roger Mills County in the southwestern part of the State, the Sinclair Oil & Gas Co. and Roy M. Johnson, an independent operator of Ardmore, were assembling acreage. The Sinclair Oil & Gas Co. was taking leases in Townships 14-24w, 12-24w, 12-25w. R. M. Johnson has secured leases in Sections 36-13-25w, 35-13-25w and 26-13-25w.

Major oil companies continue to take checkerboard and close-in leases to production and wildcat drilling tests in Lincoln County. Some of the recent transactions were Frank Buttram in Section 25-12-4, Shell Petroleum Corp. in Section 21-13-4, Devonian Oil Co. in Section 13-14-3, Dixie Oil Co. in Section 5-14-5, Deep Rock Oil & Refining Co. in Section 21-15-2, and Minnehoma Oil Co. in Section 33-15-3.

Sinclair Oil & Gas Co.'s No. 1 Stewart, C SW SW Section 33-27-16w, Woods County wildcat, was given a shot of 100 quarts at 4,750 feet, which bridged the hole 200 feet from bottom. For two weeks the crew has been trying to clean out the hole to a total depth of 4,935 feet, where a 60-quart shot went off prematurely and bridged at 2,500 feet. The shot was intended for 4,885-4,935 feet. It also resulted in several other bridges, and the company then plugged back to 4,750 feet, where it was last shot.

7,000-Bbl. Well in Konawa

During the week the Magnolia Petroleum Co.'s No. 2 Wood, SE cor. NE SW Section 29-6-6, in the south end of the Konawa Pool, in Seminole County, was opened and made 344 bbls. the first hour. The well is estimated to be a 7,000-bbl. producer a day. It blew in unexpectedly about 10 days ago and made 3,212 bbls. in 12 hours from a stray sand at 2,690-2,776 feet. It also made considerable oil on the ground when all the available storage was filled.

Sinclair Oil & Gas Co.'s No. 2 Caesar, SW cor. NW SE Section 29-6-6, is also producing from the stray sand and it made 710 bbls. the first full 24 hours from the stray sand at a total depth of 2,687 feet.

The Carr City Pool in Seminole County, which has the most activity in the Seminole area, furnished another completion during the week when the Amerada Petroleum Corp.'s No. 2 Tiger, SW cor. SE NW Section 3-8-5, flowed 925 bbls. of oil in seven and one-half hours from Wilcox sand. The well was estimated to have a potential production of 2,800 bbls. a day. The Empire Oil & Refining Co.'s No. 4 Brown, SE cor. NE SE Section 3-8-5, has 800 feet of oil in the hole from the Viola and Simpson horizons. The test was drilling in Simpson sand at 4,090 feet.

Stephens County

The activity in Stephens County is settling to normal routine work. A gas well was completed in the area and other tests have cemented casing preparatory to testing the oil sands. Other tests are expected to be completed in the next 10 days. G. Pace's No. 1 Dilley, NE cor. NE NW SW, Section 27-2s-7w, was drilled deeper and found 1,000,000 feet of gas at 1,007-30 feet. The well was originally completed at 934 feet but went dead several months ago. Same operator's No. 4 Dilley, NW cor. NE NW SW, Section 27-2s-7w, was cemented at 1,498 feet with a showing estimated at 100 bbls. a day from sand at 1,498-1,505 feet. A showing of water was found in bottom and it was plugged 2 feet. F. Jones and others' No. 1 Toney, SW cor. SW NW SE, Section 27-2s-7w, was drilling at 1,720 feet after missing the 1,500-foot pay sand.

Dixie Oil Co. and others' No. 3 Pitts, SW cor. NE NW SE, Section 3-2s-8w, Stephens County, has resumed drilling at 1,560 feet, after failing to find production at 1,503-08 feet.

Ven-Mex Oil Co.'s No. 4 Neigh, NE cor. NW, Section 34-1s-8w, is waiting for cement to set before testing a showing of oil in sand at 1,956-66 feet.

In the Tatums Pool

The Tatums Pool, in Carter County, in the southern part of the State, had one new well during the week and some express the opinion the southeast and north sides of the pool may have been defined. The new producer was Magnolia Petroleum Co.'s No. 1 W. H. Hooks, SW cor., Section 13-1s-3w, on the north edge of the field. It was completed for 640 bbls. the first 24 hours by swabbing from a series of sands at 2,133-2,315 feet. The same operators are expecting to complete No. 2 M. Dickerson, SW cor. SE NE, Section 24-1s-3w, which is located on the east edge of the field.

The southeast and north sides of the pool have been found dry from recent completions and it is believed that the operators will probably halt further drilling of tests in these directions. The two tests that defined production in the regular producing horizon are being drilled by the Magnolia Petroleum Co. The one in the southeast edge of the field is No. 1 J. Weise, SW cor. SE SW, Section 19-1s-3w, which was drilling deeper at 2,450 feet after failing to get a showing of oil in sands which are found in other near-by producing wells. The other test on the north edge of the field, is No. 4 J. Pollack, SE cor., Section 14-1s-3w,

(Continued on Page 113)

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location—	Remarks:
Smith Brothers' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w	Shut down 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w	Rigging up standard tools 4,660 ft.; shut down.

BECKHAM COUNTY

Price-McFann's No. 1 Webster, C SW SW Sec. 34-8-26w	Shut down 765 ft.
Mid-Continent's No. 1 Schaff, C NE SW Sec. 22-11-22w	Waiting on cement to set 430 ft.
Producers Exploration Co.'s No. 1 Sidell, SE cor. SW SW Sec. 17-2-22w	Shut down 2,402 ft.
Carson et al's No. 1 Danby, SW cor. SE NE Sec. 20-8-22w	Shut down 1,605 ft.
White et al's No. 1 Green, SW cor. Sec. 34-10-24w	Drlg. 1,500 ft.

BLAINE COUNTY

Washoma Oil Co. et al's No. 1 Phillips, C NW SW Sec. 13-19-10w	Drlg. 4,160 ft.

CADDO COUNTY

Magnolia's No. 1 White, SW SE Sec. 25-6-10w	Drlg. 4,503 ft.
Abernathy & Brown's No. 2 Houston, Sec. 24-6-11w	Shut down 1,090 ft.
Simms Pet. Co.'s No. 1 Cobsa, SW NW Sec. 24-6-11w	Drlg. 3,705 ft.

CLEVELAND COUNTY

Harris et al's No. 1 Highbee, SE NW Sec. 30-6-1	Shut down 6,518 ft.

COAL COUNTY

Whitney et al's No. 1 Miller, SE NE Sec. 10-2-8	Drlg. 125 ft.
Mid Western Oil Co.'s No. 1 Gum Bros., C SW NW Sec. 30-3-10	Drlg. 515 ft.
A. M. Van Orden's No. 1 Jamison, SE SW Sec. 31-1-9	Shut down 1,668 ft.
Blackwell O. & G. Co.'s No. 1 L. Jackson, NW cor. Sec. 26-3-9	Drlg. 4,910 ft.
W. E. McGraw's No. 1 King, C SW NE Sec. 11-1-8e	Shut down 3,030 ft.

COMANCHE COUNTY

Croy & Young's No. 1 Cline, NW NE NE Sec. 8-3-10w	Drlg. 1,280 ft.
G. W. Stogner's No. 1 Doebel, C SW SW Sec. 3-3-9w	Shut down 1,450 ft.

GARFIELD COUNTY

E. L. Love et al's No. 1 White, SE cor. NW Sec. 9-24-6w	Drlg. 5,825 ft.

(Continued on Page 140)

PRODUCING COMPANIES DRILLING CONTRACTORS

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Put your hole down at less cost per foot due to saving in fuel and water and cut your present boiler capacity in half.

This Prescott 7x20 Slush Pump direct connected to a 225 H.P. Turbine will do it and you will still have all the advantages of a power driven pump.

Pump can also be direct connected to an oil or gasoline engine or electric motor by simply changing the motive power-no intermediate drive is necessary.

PUMP AND TURBINE IN STOCK AT TULSA

THE PRESCOTT COMPANY

MENOMINEE. MICHIGAN U. S. A.

NOTHING PUMPS LIKE A PRESCOTT

Cut Voshell Output to Seven Per Cent

Operators in the Field Make That Decision. Restricted Outlets and Glutted Market Handicap Lease Owners

By W. A. Spinney
Staff Correspondent, Kansas Fields

A 6,000-bbl. decrease in the State's average daily production was reported for the week ending November 15. The decline is believed to be largely due to the new proration plan initiated by the Prairie Oil & Gas Co., November 10. The largest decline in production is reported in Greenwood County. The daily average for the State in the seven days was approximately 111,500 bbls.

Additional curtailment was recommended for the Voshell Pool in McPherson County. The pipe line companies agreed to the reduction. Sinclair Oil & Gas Co. which recently purchased the loading rack and gathering lines of the Skelly Oil Co. in the area, announces it will handle its own production under the proration plan which allows approximately 2,500 bbls. a day with a potential of 13,000 bbls. a day.

Other companies with production and pipe lines in the area are the Prairie Oil & Gas Co., Shell Petroleum Corp. and Derby Oil Co.

Skelly Oil Co. is the only pipe line company in the area without production of its own in the Voshell Pool. It is handling approximately 490 bbls. a day at the present time.

Ten other companies with production in the field would be without a pipe line connection if the other pipe line owners adopt the Sinclair plan. It is believed these 10 companies have approximately two-thirds of the production in the pool, or about 50,000 bbls. daily. It would mean that the Skelly Oil Co. would handle 490 bbls. a day of this 50,000 bbls.

A reduction of production in the Voshell Pool in McPherson County, was proposed during the week when the producers at a meeting in Tulsa suggested to curtail the pool's production to 7 per cent of potential. With the potential production estimated at 70,000 bbls. a day, the permitted daily production will be approximately 5,000 bbls. a day under the new plan. The meeting was attended by producers and pipe line representatives. Those present were representing Barnsdall Oil Co., Empire Oil & Refining Co., Gypsy Oil Co., Phillips Petroleum Co., Indian Territory Illuminating Oil Co., W. C. McBride, Inc., Mid-Kansas Oil & Gas Co., Prairie Oil & Gas Co., Shell Petroleum Corp., Slick, Pryor & Lockhart, and The Texas Company. The pipe line companies represented were Derby Oil Co., Prairie Pipe Line Co., Shell Pipe Line Co., Sinclair Pipe Line Co. and Skelly Oil Co.

Phillips Petroleum Co. has joined the Prairie Oil & Gas Co. in its plan to prorate wells of more than 5 bbls. per day, on the same basis that is being used in Oklahoma. Phillips Petroleum Co., which recently acquired the properties of the Independent Oil & Gas Co. in Kansas and Oklahoma, is the first of the other companies purchasing oil in the State to announce it will follow the Prairie Oil & Gas Co.'s new curtailment plan. Wells producing 5 bbls. a day or less will be allowed to produce to capacity. On leases where there are wells making more than 5 bbls. a day, each well on the lease is allowed to produce 5 bbls. plus 50 per cent of the excess production daily.

34 Wells in Eastborough

The Eastborough Pool in Sedgwick County had 30 completed wells on November 15 with a total potential production of 24,000 bbls. a day, of which only about 60 per cent is being produced. The pipe lines are running about 14,000 bbls. a day from the area.

Seven dry holes have been completed in the area defining the south, southeast and southwest boundaries of the pool. The dry holes have been drilled by Derby Oil Co., Magnolia Petroleum Co., Producers & Refiners Corp., E. F. Jones and others, Graham Oil Co., Fisher & Lauck, and Aladdin Petroleum Corp.

Forty-two operations have been started in the area, including the seven failures and the six now drilling. All of these tests were started within 2 miles of the discovery well. Eight other tests in the outlying territory trying to find the same pay horizon were either completed as failures or are still drilling. Altogether 50 operations have been started in the area east of Wichita as the result of the discovery of oil on the east edge of that city.

The production in the area is found in the chat, Viola, Misener and Simpson horizons. The chat production ranges from 2,925-3,000 feet, and deeper pay is found from 3,235-75 feet. The wells producing from the chat formation are holding up steadily. The largest producer found in that formation is the National Refining Co.'s No. 2 Murdock, SE cor. Section 18-27-2, in the northeast edge of the pool, estimated at 2,500 bbls. a day. It is also the highest well on the structure in the pool and indicates the production may extend in a northern direction from the present production. The pool now extends 2 miles north and south and a mile east and west. Seventy-five per cent of the chat wells are making water. The production in the pool is handled by the following pipe line companies, White Eagle Oil & Refining Co., Vickers Petroleum Co., Derby Oil Co., Golden Rule Pipe Line Co. and National Refining Co.

Three New Locations

Three new locations were announced for tests in the Eastborough Pool in Sedgwick County during the week, and a fourth was expected in a day or two. Two of these new locations were in the north end of the pool and the others in the south, where the deep pay horizon will be tested. Blankinship Petroleum Corp. and Fisher & Lauck are planning to drill Simpson sand tests on the Schafer lease in the NW Section 30-27-2. Fisher & Lauck's No. 2 Schafer, NE cor. SE NW Section 30-27-2, will be a twin to the No. 1 Schafer, a chat well. Blankinship Petroleum Corp.'s No. 3 Schafer, SE cor. NE NW Section 30-27-2, is also a twin to the No. 2 Schafer, a chat well.

In the north end of the pool, Magnolia Petroleum Co.'s No. 1 Vickers, NW cor. SW SW Section 17-27-2, was a location. It is on the lease the company recently purchased from Mrs. H. Vickers and is the first location announced. The National Refining Co. is expected to make a location in the NE cor. SE SE Section 18-27-2, the west offset to the new Magnolia Petroleum Co. test.

Ritz Pool Production

The Ritz Pool production may be reduced by additional curtailment in the near future. A total of 5,490 bbls. was produced in 24 hours on the gauge of November 13. The production by leases was as follows:

Company and farm—	Bbls.
Dixie-Amerada, No. 1 Flook	237
Dixie-Amerada, No. 2 Flook	275
Lario, No. 1 Ritz	265
Palmer et al, No. 1 Winn	990
Shell, No. 1 Holmes	15
Shell, No. 1 B. Koehn	15
Shell, No. 1 J. Koehn	70
Shell, No. 1 Miller	980
Shell, No. 1 Ritz	10
Shell, No. 2 Ritz	20
Shell, No. 3 Ritz	99
Texas, No. 1 Munn	29
Texas, No. 2 Munn	2,071
Texas, No. 3 Munn	455
Total	5,490

In the Decker gas area northeast of the Ritz Pool, in McPherson County four tests are drilling and one is rigging up. The deepest drilling operation in the area is the McPherson Oil & Gas Co.'s No. 1 Hill, C NE, Section 10-19-2w, which was in the Kansas City lime at 2,500 feet, about 400 feet above the chat pay horizon found in the area. Graham Brothers' No. 1 Robinson, SE cor. SW, Section 10-19-2w, was drilling at 1,850 feet. It is on the west side of the district. McPherson Oil & Gas Co.'s No. 1 Meyer, C NE NE, Section 14-19-2w, was drilling at 1,100 feet. Same company's No. 1-B Griffin, SW cor. NE, Section 14-19-2w, was drilling at 550 feet. W. C. McBride, Inc.'s No. 1 Griffin, NE cor. SE, Section 14-19-2w, is rigging up and will spud in a few days.

In the Ritz Pool, Lario Oil & Gas Co.'s No. 1 Ritz, SE cor., Section 1-20-2w, on the east side of the producing area, was showing 1,200,000 feet of gas from the chat at 2,960 feet.

The semiwildcat test of the Noble Drilling Co. and others' No. 1 Zerger, NW cor. NE SE, Section 16-21-3w, McPherson County, south of the Voshell Pool, found the chat formation at 3,012 feet, dry after coring. The test was drilling deeper at 3,120 feet.

Alco Royalty Co. and others' No. 1 Kenny, SE cor., Section 16-22-7w, a wildcat in Reno County, is being abandoned after finding water in the Silicious lime, at 3,932 feet. The test also had water in the Simpson sand at 3,875-79 feet. The test was drilled on a block of acreage that had been core drilled.

Sellens Pool Extended

The Sellens Pool, in Russell County, was extended by another well during the week a half mile northwest of the discovery well in the area. Signal Oil Co.'s No. 1 Sellens, SE cor. NW, Section 25-15-13w, swabbed 426 bbls. of oil in 12 hours from the Silicious lime at 3,238-49 feet. Oil was standing 3,100 feet in the hole when swabbing was begun and it lowered to 200 feet from the bottom after the swabbing test. The well was allowed to fill for two hours and swabbing was resumed averaging 35 bbls. an hour, making 206 bbls. in six hours. The well will be curtailed to agree with the proration plan effective in the area.

Empire Oil & Refining Co.'s No. 1-B Dillner, NE cor., Section 35-13-15w, Russell County, is the second well to reach the pay horizon in the new pool 4 miles west of Russell. It swabbed 16 bbls. the first hour from the Gorham sand at 3,296-3,313 feet. The rig was pulled in while pulling the big pipe and the completion of the well will be delayed until the rig is rebuilt.

The Gypsy Oil Co. has entered the western Kansas wildcat play, with the announcement of a new wildcat test in Ness County. The test is No. 1 Coleman, C SW NE, Section 25-17-25w, and will be drilled to a total depth of 5,000 feet. The location is on a 10,000-acre block.

An interesting fact about the new wildcat test is that the most western oil production in the State is 7 miles southwest of the test. It is the Continental Oil Co.'s No. 1 in the NE cor. SE, Section 7-18-25w, which is producing from the conglomerate at 4,428-30 feet, making around 20 bbls. a day and pumping once a week.

The Gypsy Oil Co. has seven other blocks of acreage in Ness County, two in Gove County, to the northwest, and two in Lane County to the west. Gypsy Oil Co.'s previous western Kansas operations have been confined to Russell County, a half interest in a test in Ellis County, another wildcat test in Rush County, and one in Rooks County.

The Coleman test will be drilled with rotary tools approximately 3,800 to 4,000 feet, where the standard tools will be rigged up.

Barber County

Barbara Oil Co. made location for No. 2 Lytle, CEL W half W half SW, Section 12-33-13w. No. 1 Root, C N half SW, Section 24-33-13w, has been abandoned at 4,894 feet.

Coffey County

Roberts and others' No. 1 Hay, SW cor. SE NW, Section 32-22-15, is an old well drilling deeper at 1,250 feet.

Cowley County

Lewis Production Co.'s No. 1-A Roberts, NE cor. SW, Section 12-32-4, has been completed for 750,000 feet of gas in

(Continued on Page 114)

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless marked otherwise)

BARTON COUNTY

Company, farm and location—	Remarks:
Skelton Oil Co.'s No. 1 Ott, C SE SE Sec. 16-19-14w	Shut down 50 ft.
McCool et al's No. 1 Tsern, NW SE NE Sec. 12-20-11w	Shut down 1,600 ft.

BUTLER COUNTY

McCulloch and Empire's No. 1 Lilley, SW NW NW Sec. 23-23-5	Drlg. 2,217 ft.
Farrell et al's No. 1 Sutton, NW cor. Sec. 18-28-7	Shut down 1,100 ft.

CLARK COUNTY

Watchorn's No. 2 Morrison, NW NE Sec. 20-32-12w	Fishing 6,909 ft.

CLAY COUNTY

Crystal Oil et al's No. 1 Tivier, SW cor. Sec. 19-8-2	Shut down 2,390 ft.

COFFEY COUNTY

Heyburg's No. 1 Kroft, SE SW SE Sec. 30-22-14	Shut down 818 ft.
McGregor's No. 1 Wood, NE NW SW Sec. 20-22-15	Shut down 650 ft.
Roberts et al's No. 1 Hay, SW SE NW Sec. 32-22-15	Drlg. 1,250 ft.

COWLEY COUNTY

Roth & Farout's No. 1 Reedy, SW NW NE Sec. 8-32-8	Fishing 912 ft.
Tom Fine's No. 1 Boyd, NW NE Sec. 32-32-4	Shut down 2,650 ft.

DICKINSON COUNTY

Severs et al's No. 1 Lavengood, NE SW Sec. 13-13-2	Shut down 2,775 ft.

DOUGLAS COUNTY

Steinbuckle's No. 1 Unknown, SW NE NW Sec. 34-14-21	Shut down 1,100 ft.

ELLIS COUNTY

Central Commercial Oil Co.'s No. 1 Helms, SE cor. NE Sec. 2-12-20w	Fishing 3,916 ft.

ELK COUNTY

Aladdin's No. 1 Donnell, NE SE SW Sec. 26-29-10	Wilcox 2,386-2,411 ft.; show oil; shut down.

ELLSWORTH COUNTY

Aladdin Pet.'s No. 1 Stoddenberg, C SW Sec. 22-16-10w	Rig on ground.
Milton et al's No. 1 Kester, SE NE Sec. 6-14-9w	Shut down 330 ft.
Aladdin and Carter Oil Co.'s No. 1 Barecky, C NW Sec. 3-16-10w	Drlg. 2,470 ft.
Slick et al's No. 1 Hecken NW cor. Sec. 25-17-10w	8,000,000 ft. gas 2,980-91 ft.; 3,221-43 ft.; 68 bbls. 1 hr.; 147 hrs.; 359 bbls. 4½ hrs. shut down.

FORD COUNTY

Swain et al's No. 1 Taylor, C NW Sec. 21-25-24w	Shut down 4,380 ft.

(Continued on Page 142)

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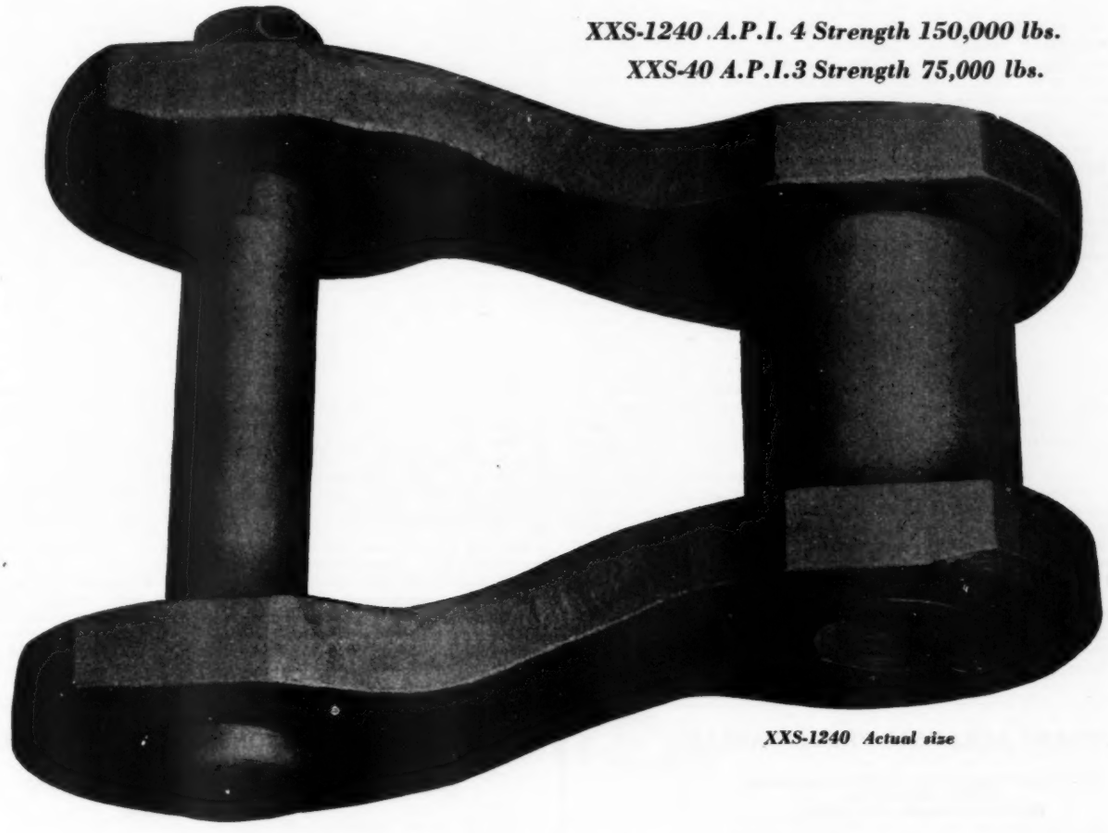

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Good Gas Well Completed at Bellevue

Few Completions of Importance Reported From Louisiana-Arkansas-Mississippi Territory. Many Tests Nearing Sands

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Nov. 17.—A 35,000,000-foot gas well from the deep Trinity on the south flank of the Bellevue Dome in Bossier Parish late in the week counteracted a threat of extinction of the three previous gas wells close by. The new gasser is H. I. Morgan's No. 10-B Kendrick, SE SW, Section 22-19-11, completed at 1,750 feet with the bottom 4 feet in oolitic lime. The group of Morgan wells on the flanks of the Bellevue Dome is closely spaced and he made location for No. 11-B Kendrick in the NE SW, Section 22-19-11, immediately after a drill stem test indicated No. 10-B would be a good well. Rock pressure was 775 pounds and what makes it look better in the face of water in the other wells is that none showed up during the new well's first day. West of Bellevue as far as Benton, Gulf Refining Co. is doing a lot of torsion balance work in Townships 20 and 21, Ranges 11 and 12. Louisiana Oil Refining Co.'s No. 14-B Bodcaw, SE SW, Section 11-19-11, to the northeast of the center of Bellevue production, scheduled for a deep test, has not found any gas or oil so far, though a test at 3,082 feet developed a little gas after a previous test at 2,030 feet was dry.

Olds & Smith cemented 6⅝-inch casing at 2,156 feet on No. 1 Brice, Section 15-18-6, Bienville Parish, 4 miles west of Arcadia near a dry hole abandoned several years ago, to test sandy shale showing oil at around 2,230 feet. This well is between 2 and 3 miles northeast of Nichols and others' wildcat that started activity around Gibsland with a show of oil at 2,358 feet last July. J. W. Clark and others have picked up another show of oil in No. 1 Tidwell, NW NW, Section 22-13-14, DeSoto Parish, southwest of Holly production, at 3,075-82 feet in broken sandy shale and is bailing test. A previous show in 12 feet of sand 2,921-33 feet failed to develop a well. Arkansas-Louisiana Pipe Line Co. got a show of gas at 2,930-85 feet in No. 3 Johnson, NE SE, Section 1-11-14, a wildcat in the old Spider district southwest of Mansfield, but there was more or less water with it and they are drilling below 3,000 feet. Keatchie Oil & Gas Co.'s No. 1 Hallie Smith, SE SE, Section 31-14-15, in the western part of the parish up near the Caddo line, is at 1,470 feet.

Odell & Lawton abandoned No. 1 Tidwell-Tull, SW NW, Section 11-13-14, at 3,095 feet as a salt water hole. It had made a show of gas with water at 3,004 feet. Location is half a mile northwest of their No. 1 Harris completed last June as a 20,000,000-foot gasser with a heavy spray of water at 3,150 feet. It had been drilled to 3,140 feet and abandoned as a dry hole several years ago by Danciger Oil & Gas Co and when completed as a gasser pepped up lagging hopes for a possible extension of the abortive Holly district.

Gas Wells Completed

Louisiana Gas & Fuel Co.'s No. 3 Jeter, Section 24-17-12, Sligo district of Bossier Parish, was completed at 2,485 feet gauging 2,412,000 feet of gas at 960 pounds, and location was made for No. 1 Johnson in the NE NE of the same section, to be drilled as a Palmer Corp. well. Woodley Petroleum Co.'s No. 3 Harris in the SE NE, Section 14-17-12, gauged 8,000,000 feet of gas at 1,050 pounds from the deep horizon at 2,465 feet. Several wells in the northern part of the Sligo district are within the 22,000-acre tract recently purchased by the city of Shreveport and, early this week, formally turned over to the United States as a site for the Third Attack Wing of the Army air service. They will have to be abandoned when construction of the new army post begins, or it is occupied, but meantime the city will collect the royalties. It is possible, however, that in the event they are still producing after date of occupancy, indicated by War Department authorities to be some time in 1932, they will be kept on production and the gas used to supply part of the post's requirements. It also is possible that the Army may drill additional wells to supply all fuel needs. Several oil and gas pipe lines from Haynesville, Homer, Carterville and the Arkansas fields cross this tract and will have to be moved before the post is occupied, but this it is understood will be done at the city's expense.

Completions in the Monroe-Richland gas area, as well as new locations, have slowed down considerably. Such was the case for the entire Shreveport division this week. One producer and a dry hole in Richland and a small well in Union Parish constituted the crop. The dry hole was Southern Carbon Co.'s No. 2-C M. L. McCoy, NE SE, Section 1-16-6, Richland Parish, up in the northeast corner of the field but inside extreme limit of production in that district. Palmer Corp.'s No. 1-B Boykin in Section 33-17-6, gauged 10,857,600 feet at 775 pounds from 2,450 feet. The Union Parish well was Bahan & Bahan's No. 2 Tanner, Section 19-22-4, 3,218,049 feet at 1,040 pounds from 2,177 feet.

Zwolle District

In the way of completions the Zwolle district of Sabine Parish also was below normal, Lacy-Burkett Co.'s No. 1 Danna, NE SE, Section 26-8-12, pumping 75 bbls. from 2,412 feet and Lyon and others abandoning No. 1 Williams, SW SE, Section 32-8-11, as a junked hole at 2,444 feet. Toteco Oil Corp. did not abandon No. 1 Louisiana Long Leaf Lumber Co., Section 18-6-12, after it started flowing about 20,000 bbls. of hot salt water from 4,077 feet as reported last week but is arranging to cut off the water if possible and go deeper. Lohman & Walker's wildcat, No. 1 Hubley, SE NE, Section 21-7-11, was dry in the marl at 2,490 feet and is going deeper. Paramount Oil & Gas Co.'s No. 1 Woolems, NE NW, Section 11-6-12, had a show of oil at 2,480 feet. Lide and others' No. 1 Ponder, SE NW, Section 15-7-11, also had a show of oil and some gas at 2,800 feet but tested dry. Tom David and others' No. 1 Smith, NE SE, Section 27-8-12, the farthest northeast wildcat in the Zwolle district cored water sand at 1,540-50 feet. Tarver and others' No. 4 Sabine State Bank, SE NW, Section 26-8-12, offsetting three producers one of which was Lacy-Burketts' No. 1 Danna, looks like a dry hole for the north extension. It was dry at 2,482 feet in the marl, again at 2,728 feet in the chalk and is drilling at 2,830 feet. Teat and others' No. 1 Craig, NE NE, Section 25-8-12, 1½ miles northeast of Tarver's wells cemented 6⅝-inch casing at 2,310 feet to test a small show of oil with salt water at 2,450 feet, which was dry, and is bailing again at 2,530 feet.

Louisiana-Texas Producing Co.'s No. 1 Fisher, a Monroe second sand test in Section 34-21-5, Morehouse Parish, was dry at 2,393 feet and was coring at 2,400 feet. A. C. Glassell's No. 1 Pittsfield Plantation, SW SW, Section 41-8-10, Concordia Parish, was abandoned by Louisiana Gas & Fuel Co. at 2,434 feet as a dry hole. Louisiana Gas & Fuel took over this central east Louisiana wildcat in September after it had tested 3,000,000 feet of gas with salt water at 1,491 feet, cemented bottom to cut off the water but got the same results and went on down with it. Arkansas-Louisiana Pipe Line Co.'s West Carroll Parish wildcat, No. 1 Griffeth, NE NW, Section 17-22-10, 30 miles east of Monroe production, also was a failure, dry at 3,005 feet.

Arkansas Operations

E. & F. Oil Co. picked up 2 feet of sand in No. 1 Beck, Section 36-15-26, Garland City district of Miller County, Arkansas, at 2,961 feet and set a short string of 4½-inch to test an oil show.

J. E. Crosbie and others' semiwildcat on the edge of Smackover production in Section 13-16-16, Union County, No. 1 G. L. Murphy, destined for a 4,500-foot test or deeper was put on the beam at 2,740 feet and started off pumping 100 bbls. of fluid, half of it 23.5 gravity oil from about 5 feet of sand. H. L. Hunt's No. 1 J. E. Trammell, Section 28-18-12, at Drong in the southeast corner of the county was abandoned at 4,365 feet as a junked hole. W. J. Thomas' No. 1 Ussrey & Arnold, a Smackover test in the SE NW, Section 36-15-15, Ouachita County was dry and abandoned at 2,418 feet. Graves Brothers' No. 1 Walker, SW SW, Section 9-14-18, 10 miles north

(Continued on Page 115)

LOUISIANA-ARKANSAS PROVEN AREAS

(Rotary operations unless otherwise designated.)

NORTH LOUISIANA
BOSSIER PARISH—BELLEVUE

La. Oil Ref. Corp.'s No. 14-B Bodcaw, 450 ft. W, 330 ft. S, NE cor. SE SW, Sec. 11-19-11.....Began drlg. Nov. 5; cmtd. 10-in. 101 ft; D.S. test 2,030 ft; dry; reaming to bottom.

H. I. Morgan's No. 10-B Kendrick, 1,720 ft. E, 1,120 ft. N, SW cor., Sec. 22-19-11 .....D.S. test; 4 ft. oolithic lime 1,750 ft; estimated 25,000,000 ft. gas; cmtd. 6⅝-in. 1,745 ft.

H. I. Morgan's No. 11-B Kendricks, 200 ft. N, 600 ft. E, SW cor. NE SW, Sec. 22-19-11.....Location.

BOSSIER PARISH—CARTER

Del.-La. Dev. Co.'s No. 6 Bollinger, 330 ft. S, 220 ft. W, NW cor., Lot 17, in Lot 16, Sec. 31-23-11.....Hole full oil; W.O.S.R; 15 ft. broken sand; T.D. 3,217 ft.

Palmer Corp.'s No. 1 Johnson, 660 ft. S, 660 ft. W, NE cor., Sec. 24-17-12.....O.W.D.D; rig up; T.D. 887 ft; completed Oct. 22, 1929; 23,885,000 ft. gas.

Palmer Corp.'s No. 2 Roberson, 330 ft. N, 330 ft. E, SW cor. NW NE, Sec. 26-23-12.....Derrick.

The Texas Co.'s No. 1 Pine Wood Lbr. Co., 1,650 ft. S, 300 ft. E, NW cor., Sec. 25-23-12.....Swbng. 10 bbls. oil and 7 bbls. S. W. 3,152 ft.

The Texas Co.'s No. 16 Wilkinson, 330 ft. N, 330 ft. E, SW NE, Sec. 36-23-13 .....300 ft. oil; bailing to test; T.D. 3,168 ft.

Tippett Drlg. Co.'s No. 3 Holmes, 330 ft. N, 330 ft. E, SW cor. NE NW, Sec. 36-23-12 .....300 ft. oil in hole; waiting on power; T.D. 3,130 ft.

BOSSIER PARISH—ELM GROVE

R. O. Roy's No. 1 Hunter, 660 ft. N, 660 ft. E, SW cor., Sec. 24-16-11 ..... Drlg. 2,067 ft.

BOSSIER PARISH—SLIGO

Palmer Corp.'s No. 1 Schnitt, 660 ft. S, 660 ft. E, C, Sec. 14-17-12 .....O.W.D.D; arranging to deepen 877 ft.

Woodley Pet. Co.'s No. 4 Harris, 247 ft. E, 440 ft. N, SW cor. SE NE, Sec. 14-17-12 .....Began drlg. Nov. 7; cmtd. 10-in. 110 ft; drlg. 1,100 ft.

(Continued on Page 197)

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Rotary operations unless otherwise designated.)

NORTH LOUISIANA
AVOYELLES PARISH

Company, farm and location—	Remarks—
Gas-Con Oil Corp.'s No. 1 Morrow (no check), Sec. 14-2s-4e	S.D. sand and shale 4,220 ft.
R. E. Tippett's No. 1 Chateline, NE NE, Sec. 34-1n-3e	Cored S.W. sand 3,140-47 ft; S.D. 3,410 ft.

BIENVILLE PARISH

Carter & Dobbs' No. 1 White, 330 ft. N, 330 ft. W, SE cor. SE SE, Sec. 9-18-6	S.D. fuel 2,240 ft.
Coyle Bros.' No. 1 Lawhon, 300 ft. N, 300 ft. E, SW cor. SE NE, Sec. 15-16-3	Rig up.
W. A. Nichols et al's No. 1 McDermott, 660 ft. S, 660 ft. W, NE cor. NE NE, Sec. 28-18-6	D.S. test 1,546 ft; (C.D.) S.W; S.D.
S. P. Borden's No. 1 Thomas, 330 ft. S, 330 ft. E, NW cor., Sec. 27-16-9	Cmtd. 7-in. 4,033 ft; T.D. 4,042 ft.
Olds & Smith's No. 1 Brice, 330 ft. N, 330 ft. E, SW cor. SE SE, Sec. 15-18-6	Sandy shale showing oil 2,230 ft; cmtd. 6-in. 2,156 ft.

BOSSIER PARISH

Andrews & Davlin's No. 1 Nattin, 100 ft. N, 250 ft. W, C, Sec. 15-22-14	D.S. test 1,546 ft; S.W; S.D; W.O.
Rombaugh et al's No. 1 Allison, SW SE, Sec. 10-19-13	S.D. 480 ft.

CADDO PARISH

Hunter Land & Inv. Co.'s No. 1 Fee, Sec. 32-18-14	Began drlg. Oct. 22; drlg. 934 ft; will drop; not commercial well.
Tex.-La. Prod. Co.'s No. 1 French, 1,270 ft. N, 675 ft. E, SW cor. NW, Sec. 34-23-16	Drlg. hard sand 4,292 ft.
Tex.-La. Prod. Co.'s No. 1 Wall, 2,715 ft. N, 1,980 ft. W, SE cor., Sec. 33-23-16	Drlg. red shale and hard sand 3,378 ft.

CALDWELL PARISH

Hudson et al's No. 1 Burton, Sec. 35-12-2e	S.D. 2,012 ft.

CATAHOULA PARISH

National Drlg. Co.'s No. 1 Marsh McMiller, 70 ft. N, 100 ft. W, C, Sec. 26-9-6	Hole clean; drlg. 2,450 ft.

CLAIBORNE PARISH

Baird Bros. et al's No. 1 Whittaker, 600 ft. N, 400 ft. W, SE cor. NE, Sec. 30-20-7	S.D. 2,200 ft.
Baugh et al's No. 1 Alexander, 330 ft. S, 330 ft. W,	

(Continued on Page 109)

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HOUSTON FORT WORTH

Wildcat Gas Well in Jim Wells County

New Sand in South End of Cole County Gas Field. Temporary Injunctions Retained in Test Cases at Austin

By B. D. Stevenson
Staff Correspondent Southwest Texas Fields

SAN ANTONIO, Tex., Nov. 17.—There have been some interesting things developed in field operations in Southwest Texas the past week including the testing of the Larcro Petroleum Co.'s No. 1 Wade in northeastern Jim Wells County, a pure wildcat 7 miles south of the Cartwright gas field, which, on drill stem test, looked good for at least 20,000,000 feet of gas; also the testing of the Magnolia Petroleum Co.'s No. 2-A Benavides in Survey 174 in Duval County at the south end of the Cole gas area and in the O'Hern-Seacord Pool at 2,841-48 feet which is a 15,000,000-foot gas well seemingly in an entirely new sand.

Of particular importance was the action of the Fifty-third District Court at Austin the Danciger injunction suit against proration in the Panhandle and the Louisiana Oil & Refining Co.'s suit for injunction against proration in the Darst Creek Field. Everything was left in status quo until the court can decide the merits of the suits.

Temporary injunctions were issued in each case some time before. On the hearing in Austin the court allowed the temporary injunctions to stand, denying the application of the Railroad Commission to have them dissolved, but the Railroad Commission also agreed not to assess or attempt to assess any penalties for violation of its orders.

It was recognized that this is the first test of the constitutionality of the proration rules and orders of the commission and the court desired plenty of time to study the matter. Producers in the fields affected can continue to produce as much or little oil as they wish until the court decides the case, which it is expected will be rather soon. In the meantime the Darst Creek operators were running on a basis of about 51,000 bbls. of oil daily. About the middle of the last week, however, the Darst Creek operators reached a mutual agreement to restrict to 30,000 bbls. daily which is the amount ordered by the Railroad Commission and that agreement is now in effect. For the week ending November 8 Darst Creek produced a daily average of 37,680 bbls. Early last week it went to the 50,000-bbl. schedule and by the middle of the week had agreed to a new proration allowable of 51,670 bbls. daily. Friday another agreement was reached which cut it to 30,001 bbls. which is .161398 of the potential of 183,254 bbls. This accounts for 222 wells in the field. How long this agreement will stand remains to be seen. It is not expected to be long before the court decides the injunction suits but however decided it is presumed the matter will be carried to the higher courts.

New Proration in Pettus

In the Pettus Field a new proration gauge was taken of 15 wells in the Townsite Pool and it showed 11,408 bbls. daily which is very much higher than most folks anticipated. The allowable for that pool is 4,500 bbls. The Cosden allowable is 2,700 bbls. and the Ray-McKinney Pool on the east 1,250 bbls., both of those pools remaining unchanged. In the hearings in Austin before the Railroad Commission there were no objections to continuing the proration rules and orders as to Pettus and Joe Bruner Fields and they have been continued.

A new proration gauge of the Joe Bruner Field shows a potential of 19,153 bbls. daily and allowable runs of 15,334 bbls. and this proration holds for the period November 4, 1930 to February 2, 1931, and the average daily runs from the field for October was 15,387 bbls. which is about as close to the allowable as it is possible to get.

In the multiplied shiftings in the proration of Darst Creek since the Louisiana Oil & Refining Co. filed its injunction suit, the proration agreement retroactive was for a daily allowable of 59,750 bbls. for the period October 29 to November 12 and from November 12 to November 29 it was to be 51,670 bbls. It may be that some operators who failed to get as much as they were entitled to in the back periods will run in excess of their portion of the 30,000-bbl. allowance for the field during the next period.

There are only two fields in Southwest Texas where the potential production of the fields is considerably higher than the daily allowable runs under proration. These are the Darst Creek Field in Guadalupe County with a potential according to the latest recent gauge of 183,254 bbls. daily, and the Pettus Field in Bee County with a potential of around 20,000 bbls. daily. The Pettus proposition consists of three small separate pools, the Townsite Pool being the biggest with a potential of 11,408 bbls. from 15 wells. There are more wells in the townsite than 15 but the others were not gauged and are for the most part gas wells making considerable high gravity oil. The production of both fields is largely major oil company production.

In the Darst Creek Field 207 of the 223 wells and 35,750 bbls. of the 37,680 bbls. daily average for the week ending November 11 was major oil company production.

In the Pettus Field including the three pools 26 of the 36 wells and 6,265 bbls. of the 7,495 bbls. daily average for the week ending November 8 was major oil company production.

Daily Average Production

Daily average production from the two fields and companies producing the oil for the seven days ending November 11 for Darst Creek and seven days ending November 8 for Pettus was as follows:

DARST CREEK

Company—	No. of wells	Dly. av.
The Texas Company	50	7,265
Gulf Production Co.	42	6,655
Humble Oil & Refining Co.	44	5,820
Sun Oil Co.	12	5,460
Magnolia Petroleum Co.	34	2,925
Louisiana Oil Refining Co.	12	6,530
Abercrombie et al	5	1,150
Empire Gas & Fuel Co.	8	820
Penn Oil Co.	1	75
Stroube & Stroube	1	110
Dr. F. L. Thomson	1	25
Trinity Drillers	5	375
Cranfill & Reynolds	1	50
Turman	1	45
Simms Oil Co.	3	275
Jake Jarmon	1	100
Total	223	37,680

PETTUS FIELD

Company—	No. of wells	Dly. av.
Union Producing Co.	9	2,505
Humble Oil & Refining Co.	7	1,875
Houston Oil Co.	6	1,220
Buchanan et al	2	445
Cosden Oil Co.	3	515
C. R. & M. Co.	2	325
S. R. C. Oil Co.	2	320
Barnsdall Oil Co.	1	150
Baytex Petroleum Co.	1	70
Glasscock Brothers	2	40
C. F. Nichols	1	30
Total	36	7,495

Laredo District

In the Laredo district the past week there were only two completions: Magnolia Petroleum Co.'s No. A-3 Benavides in Survey 174 of Duval County and the S.R.C. No. D-2 Montemayor in the Escobas Pool for 100 bbls. of oil at 1,308 feet with sand from 1,291 feet in Block 8 of Survey 64 at the north end of the pool.

George Marshall has not completed his No. 3 Webster in the Carolina-Texas Pool at 2,123-60 feet, but it looks like a good gas well. It is on proven territory and in a sand producing in other wells in the field.

Wells that have been watched because of special importance include the Magnolia Petroleum Co.'s No. 1 Edge-Hahl in Survey 63 about 3 miles northeast of the Schoolfield-O'Byrne Pool in Duval County which had a considerable showing at 2,383-86 feet. It is standing now at 3,912 feet.

In the northwestern corner of the county S.R.C. abandoned its No. 2 in the new pool it opened in connection with the Vacuum Oil Co. The hole was lost at 1,906 feet with stuck drill stem. It had failed to find the 1,717-foot sand producing in the discovery well. No new location has yet been announced but no doubt one will be soon.

The Vacuum Oil Co. is rigging up in its No. 1 Duval Land Co. in Survey 280 which is 4 miles southwest and The Texas Company is rigging up in Survey 297 about a half mile northeast of the discovery well. S.R.C. No. 2 was about 750 feet southwest of the discovery well. Drilling of The Texas Company test will add a lot to the geology of the new pool. Probably the next location will be west of the discovery well.

In Southwestern Jim Hogg County and

(Continued on Page 115)

SOUTHWEST TEXAS PROVEN AREAS

DOBROWOLSKI POOL—BEXAR COUNTY

Company, farm and location—	Remarks:
Morgan Bros.' No. 3 Masterson, 300 ft. S of No. 2 Masterson, Miguel Gortaris Sur.	T. D. 550 ft.; set csg.
F. H. Eckert's No. 1 Drobrowolski, 400 ft. from W line, 150 ft. from S line of lease, Sur. No. 52	Location.
Pen-Tex Oil Co.'s No. 5 Sandemer, 300 ft. S of No. 4 Sandemer	Location.
Pen-Tex Oil Co.'s No. 6 Sandemer, 300 ft. S of No. 5 Sandemer	Location.
W. R. Swearingen's No. 2 Halberdier, 300 ft. SE of No. 1 J. Perego Sur.	T. D. 460 ft.; drlg.
A. J. Swearingen's No. 6 Sandemer, 600 ft. S of No. 1, M. Manchaca Sur.	Location.
A. J. Swearingen's No. 7 Sandemer, 300 ft. S of No. 6, M. Manchaca Sur.	Location.

DARST CREEK FIELD—GUADALUPE COUNTY

Gulf Prod. Co.'s No. 5 Tadlock, 300 ft. S of No. 3, 150 ft. from W line	T. D. 380 ft.; drlg.
Humble Oil & Refining Co.'s No. 2-A Dowdy, NE cor. of "A" lease	Location.
Humble Oil & Refining Co.'s No. 9 D. D. Baker, 460 ft. from E line, 150 ft. from N line of lease, Darst Sur.	T. D. 2,549 ft.; comp. for 225 bbls.
Humble Oil & Refining Co.'s No. 19 A. L. G. Denman, 2,588 ft. from SE cor., 450 ft. from NE line of lease, Emmett Sur.	T. D. 2,590 ft.; comp. for 800 bbls.
Humble Oil & Refining Co.'s No. 20-A Denman, 2,558 ft. from SE cor., 450 ft. from NE line, Denman tract, Emmett Sur.	T. D. 2,585 ft.; comp. for 1,200 bbls.
Humble Oil & Ref. Co.'s No. 1-B Sue Denman, 150 ft. from the N and W lines of lease, in the extreme NE cor. of the J. C. Darst Sur.	Derrick.
Louisiana Oil Refining Co.'s No. 8 Dix, 664 ft. from NE line, 620 ft. from SE line of lease, Robinson Sur.	T. D. 2,560 ft.; comp. for 1,753 bbls.
Louisiana Oil Refining Co.'s No. 9 Dix, 664 ft. from NE line, 1,130 ft. from SE line of lease, Robinson Survey	T. D. 2,575 ft.; comp. for 1,350 bbls.; 38 per cent water.

(Continued on Page 105)

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

BLANCO COUNTY

Company, farm and location—	Remarks:
Anderson & Manning's No. 1 Speer, 600 ft. to S line, 800 ft. to W line, John W. Speer Sur.	Dropped from report.
Ben H. Ashe Pet. Corp.'s No. 1 Glasscock, moving in to drill on leases out of the Rodson block north of Blaco City	Location.
Hardy-Sitton's No. 1 McMillan	T. D. 570 ft.; running 10-in. csg. to set at 560 ft.
Liles-Adams et al's No. 1 Stanford, 150 ft. to S line, 1,429 ft. to E line of James Stanford's No. 155	T. D. 660 ft.; drlg.
McCleary et al's No. 1 Schenling, 900 ft. to SE line, 600 ft. to S line of J. A. Rouse No. 118 Sur., 4 miles SW from Blanco City	T. D. 550 ft.; correction; shut down.
J. R. Meek's No. 1 Walker, 360 rds. from W line, 482 rds. from S line of 375-ac. tract in Sur. No. 23	T. D. 985 ft.; drlg.
G. Rosenfield's No. 1 Hohenberger, 800 ft. to W line, 1,250 ft. to N line, Sur. No. 94	T. D. 375 ft.; standing.

BASTROP COUNTY

Pacific Oil & Gas Co.'s No. 1 J. M. Litton, 150 ft. N and W lines of tract	T. D. 2,050 ft.; drlg. in chalk.
Majestic Pet. Co.'s No. 1 J. M. Breeding, 160 ft. from N line, 1,020 ft. from W line of 200-ac. tract, 940 varas from W line, 1,225 varas from S line of M. Andrews Sur., 13 miles W from Smithville	T. D. 375 ft.; standing.
Champion et al's No. 1 Smith, 2,541 ft. to NW line, 663 ft. to SW line of tract, T. Standifer Sur.	T. D. 2,376 ft.; drlg. in Georgetown.
Schimmel & Batts' No. 2 Trigg, 975 ft. S No. 1, James Stewart Sur.	Drlg. 100 ft.
R. S. Bolling's No. 1 McWilliams, 150 ft. from N line, 1,111 ft. from W line of Wm. McWilliams tract, Glasscock Sur.	T. D. 1,400 ft.; drlg.

BROOKS COUNTY

Southern Crude Oil Purchasing Co.'s No. 1 Holbien-Wormser, 900 ft. from E line, 1,000 ft. from S line of Blk. 39, E. P. de Maguellas Sur.	T. D. 4,635 ft.; drlg.

BEE COUNTY

William F. Morgan and Independent Oil & Gas Co.'s No. 1 Quincy, C Blk. 9 of 11,000-ac. Quincy Subd. of Bee County	T. D. 5,520 ft.; drlg.

(Continued on Page 105)

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CONTINENTAL

Lockport Extension More Promising

Well in Third Producing Horizon More Favorable. Good Producers at Barbers Hill. Sulphur Dome Has Largest Well

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Nov. 17.—The west extension pool of the Lockhart district, Calcasieu Parish, Louisiana, appeared considerably more promising for the development of important production with the bringing in by Yount Lee Oil Co. of its No. 1 Miller, which opened the third producing horizon there. This is the fourth producer completed in the pool but its record, which has shown a consistent increase in flow, has been more favorable than any of the other wells.

The horizon from which this well was completed is the deepest of the three so far found productive. The sand is at 6,679-6,705 feet and one joint of 5-inch screen was set. The hole originally was drilled to a total depth of 7,854 feet after passing up the oil sand but was plugged back to the present level when drill stem stuck. The well came in flowing 792 bbls. of pipe line oil on a three-eighths-inch choke in the first 24 hours. Two days later the production has increased to 1,030 bbls. on the same choke and on the fourth day it was up to 1,252 bbls. and still increasing. The pressure has remained almost constant at 650 pounds. Gravity of the oil is high for that field being 40.1° (corrected for temperature).

Yount Lee Oil Co.'s well which is on a block formerly owned by Shell Petroleum Corp. and on which one deep test was drilled by the latter company, is a substantial distance to the north of the other production in the area obtained by the Union Sulphur Co. and the Vacuum Oil Co., the former having two wells and the latter one. Union Sulphur Co.'s No. 2 H. J. Moss, completed two weeks as a 700-bbl. well from a 5,100-foot horizon late the past week was maintaining a choked-in flow of better than 500 bbls. The discovery well, Union's No. 1 H. J. Moss, in sand at 4,814 feet, is flowing around 45 bbls. of fluid, and Vacuum Oil Co.'s No. 7 Farquahar, directly offsetting it to the east, is flowing several hundred bbls. The discovery well, originally was a 700-bbl. well, being completed early in the year. It has been worked over several times.

Present development consists only of Union Sulphur Co.'s No. 1 Martha Moss, which, at latest report, was drilling gumbo and lime at 6,790 feet. However, Vacuum Oil Co. is rigging up for No. 8 Farquahar, a direct east offset for Union's No. 2 H. J. Moss, the latter two being approximately 600 feet to the south of Vacuum's No. 7 Farquahar and Union's No. 1 H. J. Moss, respectively.

This pool is approximately 2,000 feet west of the main Lockport Field being developed jointly by the Vacuum Oil Co. and Gulf Refining Co. and which operators hold all the intervening acreage.

Good Wells at Barbers Hill

Two more good wells were completed at Barbers Hill the past week. Sun Oil Co.'s No. 1 Zadie Fisher, fourth well on the southwest flank of the dome, came in flowing 960 bbls. on a half-inch choke the first 24 hours from sand at 5,574-5,659 feet. One hundred and fifteen feet of 5-inch screen was set in the hole. Pressure of the well is 350 pounds and gravity of the oil 30.5°. This well is a diagonal offset to Mills Bennett Production Co.'s No. 1 Henry Fisher, completed several weeks ago.

On the southeast flank of Barbers Hill, McAlbert Oil Co.'s No. 1-B Higgins set 115 feet of screen at 5,316 feet and came in flowing 1,385 bbls. of pipe line oil daily on two three-eighths-inch chokes, pressure 380 pounds. This particular sector of the dome has been an unusually good productive spot, yielding some of Barbers Hill's most consistent wells.

The largest well of the week was Union Sulphur Co.'s No. 745 fee, Sulphur Dome, Louisiana, which came in flowing an estimated 1,800 bbls. daily on a half-inch choke. This well is from a sand at 4,063-79 feet, being deepened from a sand at 3,616 feet, where it was completed during 1929 for 3,000 bbls. daily.

Esperson Well

Cranfill-Reynolds Co. added to its long list of successive new wells completed at Esperson Field, western Liberty County, by No. 17 Esperson, flowing 200 bbls. of fluid, 6 per cent b.s. and water, on a half-inch choke from sand at 2,185 feet, where three joints of 4½-inch screen were set. This test was drilled to 3,951 feet, but was sidetracked to the present sand. Esperson has proved one of the most unusual of the new fields on the Gulf Coast. Although there have been no large wells, the field has brought in a long series of small, consistent producers extending over a wide area. In contrast to most of the other new production of recent years, which has been almost exclusively Grade B, this field has yielded only Grade A oil, which is much in demand. No salt or cap rock has been encountered as yet but the field is assumed to be a salt dome field, the dome being extremely deeply seated.

Refugio Field

At Refugio in the lower Gulf Coast country and out of the salt dome area, Houston Oil Co. finally has made a well in its No. 1 Rose Lambert, a west offset to Union Producing Co.'s No. 1 M. F. Lambert, a mile and a half northeast of the main Refugio Field. This makes the third well in that area, which has been marked by a series of disappointing developments since the bringing in of the Union's No. 1 M. F. Lambert early in 1929. Houston Oil Co.'s well, a few feet lower on the sand than the discovery well, which it offsets, is in the pay at 5,891-5,901 feet with 15 feet of screen. The well came in flowing at the rate of 175 bbls. daily on five-sixteenths-inch choke with pressure of 525 pounds but since has increased to above 300 bbls. daily. The completion of this well follows a series of tests at various settings in this sand, all of which have resulted in salt water.

On the south edge of the deep sand development on the east side of the townsite of the main Refugio Field, Moody-Seagraves Producing Co.'s No. 1 Tom Heard, Block 3, was swabbed in as a 525-bbl. well on a three-sixteenths and a quarter-inch choke from sand at 6,464-69 feet. This is one of a series of wells being deepened to this horizon from shallower sands, it originally being completed early this year in sand at 5,472-83 feet as a 500-bbl. well.

Other Completions

Other completions consisted of one shallow pumper at Batson, Paraffine Oil Co.'s No. 86 fee, 15 bbls. at 409 feet, and two workovers at Liberty, Sun Oil Co.'s Nos. 23 and 25 Mitchell, both in the shallow sand.

The week was marked by the abandonment of a number of interesting wildcats. At Port Neches, southwestern Orange County, Gulf Production Co. quit its No. 1 W. H. Starks, 1,500 feet north of the field, where The Texas Company has four producing wells. This test, drilled to a total depth of 6,988 feet, failed to encounter anything of importance. This is the second deep test drilled by this company in the Port Neches area, the other being about 1½ miles east of The Texas Company's field. The Texas Company's No. 2 Stark, the only other rig now running in the area, after going to 6,045 feet, where drill stem stuck, has plugged back to 4,144 feet and is waiting on cement. It will make a second test of a sand at that level, which, in the first test last June, showed salt water. This is several hundred feet west of production.

In Calhoun County, The Texas Company has abandoned its No. 1 Thomas, J. P. Tilley Survey, at 5,956 feet with drill stem test. This wildcat, located on geophysical findings, encountered several different small showings but drill stem tests showed salt water.

Hockley Dome

Humble Oil & Refining Co. has quit its No. 8 Warren at the Hockley Dome, Harris County. The well, one of a long series which Humble has drilled on and around this old dome, so far unproductive, was drilled to 5,881 feet without a showing. Hockley, on which drilling has been going on at times for over 20 years, has proved somewhat of a puzzle. A number of showings have been found but only a short lived small pumper or two has rewarded all this development.

Another deep wildcat abandoned in Harris County was Golden State Oil Co.'s No. 1 McDade, N. Brady Survey, about 5 miles southwest of the Humble Field. This test was drilled to 6,016 feet without a showing.

Gulf Refining Co. has abandoned its No. 7 United Land Co., Sorrento, Ascension Parish, drilling salt 1,920-2,275 feet. This is an old cap rock well, completed in May, 1928, for 1,200 bbls. at 1,630 feet.

Production Unchanged

Production of coastal fields continued almost unchanged the past week. A slight increase in the Texas fields was offset, except for 16 bbls. by Louisiana fields. Figures for the week ended November 15 were:

SOUTHEAST TEXAS

Allen	20
Barbers Hill	21,398
Batson	1,092
Big Creek	3,318
Blue Ridge	1,621
Brenham	142
Boling	937
Clay Creek	1,080
Damon Mound	650
DeWalt	11,952
Esperson (Sheeks)	3,015
Fannett	649
Goose Creek	4,303
Hankamer	2,147
High Island	793
Hull	9,096
Humble	13,583
Jasper County	25
Lost Lake	421
Markham	200
Moss Bluff	181
Mykawa	267
Nash	206
North Dayton	1,140
Orange	2,034
Orchard	2,138
Pierce Junction	10,132
Port Neches	1,675
Raccoon Bend	8,857
Refugio	25,554
Saratoga	1,275
Sour Lake	2,130
South Liberty	3,086
Spindletop	14,915
West Columbia	4,156
Total Southeast Texas	154,079
Week ending November 8	152,658
Increase	1,421

SOUTH LOUISIANA

Anse La Butte	32
Bayou Blue	200
Bayou Bouillon	136
Black Bayou	1,166
Edgerly	387
Jennings	2,004
Hackberry	2,852
Lake Barre	2,367
Lake Pelto	92
Lockport	3,899
Port Barre	2,512
Sorrento	65
Starks	670
Sulphur	2,875
Sweet Lake	1,145
Vinton	4,818
Welsh	121
White Castle	1,059
Total South Louisiana	26,400
Week ending November 8	27,805
Decrease	1,405
Total Gulf Coast	180,479
Week ending November 8	180,463
Increase	16

GULF COAST FIELDS AND WILDCATS

Week Ending November 15
All Rotary

BARBERS HILL—CHAMBERS COUNTY

Mills Bennett Prod. Co.'s No. 4 Barber, north	Cavity 1,383 ft.; to set 20-inch casing; top cap 1,246 ft.
Mills Bennett Prod. Co.'s No. 10 Barrow (workover)	Drlg. 3,000 ft.
Mills Bennett Prod. Co.'s No. 3 Gulf Fisher, south	Drlg. hard sand 953 ft.
Humble Oil & Ref. Co.'s No. 6 fee, west	Fishing for liner 6,602 ft.
Humphreys Corp.'s No. 1-B Barber, north	Total depth 6,793 ft.; sidetracked and drlg. sandy shale 3,789 ft.
Humphreys Corp.'s No. 2-B Barber, north	Drlg. surface formation 62 ft.
Humphreys Corp.'s No. 6-A Barber, northwest	Drlg. sand and shale 4,750 ft.
Humphreys Corp.'s No. 1 Louise Fitzgerald, north	Drlg. sand and boulders 548 ft.
Humphreys Corp.'s No. 1 Morgan (workover)	Total depth 6,404 ft.; pulling liner.
Humphreys Corp.'s No. 8-B Kirby (workover)	Drlg. lime and sand 4,970 ft.
Humphreys Corp.'s No. 10-A Kirby (workover)	Drlg. rock 2,888 ft.
Humphreys Corp.'s No. 1 Winfree, west	Drlg. hard sand and lime 4,429 ft.
McAlbert Oil Co.'s No. 1-B Higgins, east	Comp. flowing 1,385 bbls. 5,316 ft.
Republic Prod. Co.'s No. 3 Kirby (workover)	Trying to set 2½-in. insert screen 6,700 ft.
Sinclair Oil & Gas Co.'s No. 2 Smith, west	Sticky shale 5,227 ft.; reaming.
Sun Oil Co.'s No. 5 Chambers (workover)	Drlg. shale 5,429 ft.
Sun Oil Co.'s No. 6 Chambers (workover)	No report.
Sun Oil Co.'s No. 7 Chambers, south	Drlg. salt 2,531 ft.
Sun Oil Co.'s No. 12 Wilburn fee, east	Drlg. hard sand and lime 4,667 ft.
Sun Oil Co.'s No. 13 Wilburn fee, east	Rig.
Sun Oil Co.'s No. 1 Zadie Fisher, southwest	Set screen 5,659 ft.; comp. flowing 960 bbls.
The Texas Company's No. 1 Williams, southwest	Preparing to make drill stem test 6,076 ft.
The Texas Company's No. 1 Winfree, west	Drlg. lime 4,551 ft.
Yount Lee Oil Co.'s No. 1 Hindman, southwest	Drlg. sand and shale 6,700 ft.
Yount Lee Oil Co.'s No. 16 Chambers, south	Drlg. 4,531 ft.; to set 7⅝-in. casing.
Yount Lee Oil Co.'s No. 17 Chambers, south	Location.
Yount Lee Oil Co.'s No. 3 Fisher, southwest	Drlg. hard sand 6,831 ft.
Yount Lee Oil Co.'s No. 6 Phillips, east	Waiting on orders.
Yount Lee Oil Co.'s No. 1 Winfree, west	Rigging up.

RACCOON BEND—AUSTIN COUNTY

Humble & Valley's No. 2 Duncan-State	Drlg. sand 3,477 ft.
Humble & Valley's No. 3-B Hardy	Derrick.
Humble & Valley's No. 9 Mueller	Derrick.
Humble & Valley's No. 7 Payne	Derrick.
Humble & Valley's No. 8 Payne	Derrick.
Humble & Valley's No. 1-B Reese	Drlg. shale 4,531 ft.
Humble & Valley's No. 1-B Remmert	Drlg. shale and sand 3,467 ft.
Humble & Valley's No. 6 Saunders	Derrick.

(Continued on Page 111)

Hobbs Pool Discovery Well Deepened

After Producing 700,000 Bbls. Is Rated 7,646 Bbls. Capacity. Amerada Well May Be One of Best in Field. New Test in Utah

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Nov. 17.—The Humble Oil & Refining Co.'s No. 1-A Bowers, the discovery well in the big production area of the Hobbs Pool in New Mexico, which disclosed the possibilities of that field, after producing 700,000 bbls. of crude, was deepened 109 feet and is rated at 7,646 bbls. capacity daily. Two new locations in the Hobbs Pool were reported and two wells were completed by the California Co. One of the best wells in the pool, the Amerada Petroleum Corp.'s No. 4-B State, made 25,175 bbls. on a company test and is waiting for proration test. Drilling in the Eunice area is on the increase and the Continental Oil Co. has made a location for another well to the northwest of production. Two new operations were reported in San Juan County.

The Greasewood Dome discovery in Weld County, Colorado, is being equipped for drilling in, but no date has been set and in the meantime leasing by the major companies continues. Two new locations were reported, one in Pueblo County and the other in Fremont County. The Texas Production Co. has a good producer in Routt County only one-fourth mile from an igneous plug.

Utah is to have another test on the Salt Valley Dome in Grand County by the Utah Southern Oil Co.

Casper's future as a refining center is assured by the president of the Midwest Refining Co. in a letter to the Chamber of Commerce. The Osage Field had a completion flowing 800 bbls. a day, another small well and one failure. Mid-Continent companies are showing an interest in the territory between Douglas and the Lance Creek Field. One new operation is starting in the Big Muddy Field.

NEW MEXICO

Hobbs Pool—Lea County

The Humble Oil & Refining Co.'s No. 1-A Bowers, C NE SE, Section 30-18-38, the discovery well in the big production area of the Hobbs Pool, which blew in last January at 4,106 feet and started the drilling campaign which has resulted to date in the building up of a potential production of 1,000,000 bbls. of oil per day in that field, has been deepened to 4,215 feet and regauged for proration purposes. It was given a potential of 7,646 bbls. daily capacity at this depth. The well was on production for several months before the field was put on a proration basis and up to this time it had produced 700,000 bbls. of oil, or about enough crude to pay for that company's drilling costs in the field up to this time. No. 1-A Bowers topped the pay at 4,008 feet and was drilled originally to 4,106 feet where it made 9,720 bbls. the first 24 hours.

Two new locations were reported this week. One was the Landreth Production Co.'s No. 1-C State, NE cor. NW, Section 6-19-38, on the west side of the pool half a mile west of the Atlantic Oil Producing Co.'s No. 1 State, the nearest producer, and half a mile south of the Vacuum Oil Co.'s No. 1 Berry, a drilling well. The operation is for the joint account of the Landreth company with the Maljamar Oil & Gas Co. The other location is the Tidal Oil Co.'s No. 5 Grimes, NW SE NE, Section 29-18-38, an offset on the south to the Humble's No. 1 Grimes.

Two completions reported were both credited to the California Co. No. 3 State, SE cor., Section 29-18-38, was given a potential of 3,758 bbls. of oil and 39,800,000 feet of gas at a total depth of 4,175 feet, and No. 4 State, SW cor. SE, Section 29-18-38, was rated at 9,396 bbls. of oil and 10,000,000 feet of gas at a total depth of 4,170 feet.

The Amerada Petroleum Corp.'s No. 4-B State, NE cor. NW, Section 29-18-38, gives promise of being one of the best wells in the field. It topped the pay at 4,030 feet and was drilled to 4,214 feet and made 1,016 bbls. in one hour open flow, and 25,175 bbls. in 24 hours on a company test. It was then shut in for proration test. It is an offset on the south to the Shell Petroleum Corp.'s No. 2-B McKinley, which was given a rating of 23,911 bbls. a day.

Drilling Operations

There are 26 active drilling operations in the field, including the two new locations reported this week, or about one-third of the maximum reached during the past summer. Several are outside wells feeling for the limits of the pool on the west and northwest. Operations include the following:

Continental Oil Co.'s No. 1-C State, C NW SE, Section 5-19-38, is drilling at 2,720 feet in anhydrite. It topped the salt at 1,660 feet and anhydrite at 1,500 feet. Base of the salt was at 2,550 feet.

Empire Gas & Fuel Co.'s No. 3 Hardin, SE NE NW, Section 19-18 38, is drilling at 3,663 feet in anhydrite and lime, and its No. 3 Fowler, SW cor. NE, Section 31-18-38, cemented 7-inch at 3,957 feet in lime.

Hobbs High, Inc.'s No. 1 Tatum, NW SW SW, Section 35-18-38, which is believed to mark the southeastern limits of the pool, is shut down for orders at 4,315 feet at which depth sulphur water rose 800 feet in the hole in seven hours.

Humble Oil & Refining Co.'s No. 2-A State, SE cor., Section 25-18-37, is drilling at 3,860 feet in anhydrite and lime, and its No. 3-A State, C NW SE, Section 25-18-37, is drilling at 1,940 feet in anhydrite and salt. Last named topped the anhydrite at 1,595 feet and elevation is 3,665 feet.

Mid-Continent Oil Co.'s No. 1 Fowler, NE NW NW, Section 31-18-38, is drilling at 3,753 feet in lime. It had first oil at 3,290 feet.

Midwest Refining Co.'s No. 26 State, C SE SW, Section 4-19-38, is drilling at 3,845 feet in anhydrite and lime and had a show of salt water at 3,750-75 feet. Same company's No. 11 Thorpe, C NE NW, Section 10-19-38, spudded on November 3 and is drilling at 83 feet in sand, and its No. 11 State, C NE NW, Section 9-19-38, spudded on October 30 and cemented 16-inch at 144 feet. Midwest's No. 26 McKinley, C SE NW, Section 5-19-38, spudded on October 29, and its No. 29 Turner, C SW SW, Section 34-18-38, is drilling at 3,232 feet in anhydrite and sand.

National Securities Oil Co.'s No. 1 Linam, NE SE SW, Section 33-18-37, spudded with cable tools on November 1 and is bottomed at 240 feet in the red beds and rigging up rotary.

Ohio Oil Operations

The Ohio Oil Co.'s No. 4 State, SW cor., Section 30-18-38, is drilling at 3,558 feet in anhydrite and lime. It topped brown lime at 2,865 feet, had first gas at 2,878 feet and first oil at 3,280 feet. Elevation is 3,657 feet.

Shell Petroleum Corp.'s No. 2 Berry, NW cor. SE, Section 31-18-38, is running 7-inch at 3,957 feet total depth, and its No. 8 McKinley, C N half N half SE, Section 19-18-38, cemented 7-inch at 4,000 feet.

Skelly Oil Co.'s No. 2 Fowler, SE cor. NW, Section 31-18-38, is bottomed at 3,973 feet in lime and cemented 7-inch at 3,964 feet.

Sun Oil Co.'s No. 4 McKinley, C SW NE, Section 5-19-38, is bottomed at 175 feet and rigging up rotary.

Texas Pacific Coal & Oil Co.'s No. 2-G State, NE cor. SE, Section 24-18-37, is drilling outside 7-inch at 4,170 feet.

The Texas Company's No. 3-C State, C SW NE, Section 25-18-37, spudded on October 28 and is drilling at 1,680 feet in red rock. It topped anhydrite at 1,502 feet.

Tidal Oil Co.'s No. 4 Grimes, SE cor. NE, Section 29-18-38, is drilling at 3,825 feet in lime. It topped brown lime at 2,815 feet, and had first gas at 2,835 feet and first oil at 3,208 feet. Elevation is 3,652 feet. Same company's No. 2 Hardin, SW SE NE, Section 19-18-38, is bottomed at 4,240 feet in lime, with 3-inch at 4,185 feet, and is preparing to test. This is one of the deepest wells drilled in that part of the pool. Tidal's No. 3 Hardin, SW NW NE, Section 19-18-38, is drilling at 4,050 feet in lime.

Vacuum Oil Co.'s No. 1 Berry, NE cor. SW, Section 31-18-38, is drilling at 3,885 feet in anhydrite and lime. It topped brown lime at 2,847 feet and elevation is 3,642 feet.

Eunice Area—Lea County

Continental Oil Co. has made another location in the Eunice area in its No. 1-A Lockhart, 330 feet each way out of the northeast corner, Section 18-21-36, half a mile northwest of its No. 2 A. E. Meyers, SE cor. NW, Section 17-21-36, which is rigging up. The three producers drilled in this pool are in a line with each other in a northeast-southwest direction and the Continental's Lockhart well will feel out the pool towards the northwest. Shell Petroleum Corp.'s No. 1 Coleman, NW cor. SE, Section 17-21-36, is drilling at 1,290 feet in sand and red beds. It topped anhydrite at 1,285 feet and elevation is 3,642 feet. It is an offset on the south to the Tidal Oil Co.'s No. 1 Coleman. Atlantic Oil Producing Co.'s No. 1 Coleman, SW NE NW, Section 17-21-36, is digging cellar. Getty Oil Co.'s No. 1 State, NE cor., Section 19-21-36, which gauged 332 bbls. first 12 hours when tested last month and then shut in, is preparing to go on production. It is bottomed at 4,000 feet and topped pay at 3,870 feet. Continental Oil Co.'s No. 1 William Meyers, SW cor. NW, Section 28-22-36, has shut off sulphur water at 3,842-45 feet and is drilling at 4,068 feet. Ohio Oil Co.'s No. 1 State-McDonald, SW NW SW, Section 15-22-36, has plugged back from 3,904 feet to 3,878 feet and is preparing to test. The 3-inch tubing is at 3,866 feet.

Lovington Area—Lea County

Galt, Brown and others' No. 1 State, SW NW NW, Section 9-15-35, 6 miles northwest of Lovington, is drilling at 1,940 feet in anhydrite and red rock. It topped anhydrite at 1,920 feet and elevation is 4,019 feet.

Caprock Area—Lea County

Western Drilling & Engineering Co.'s No. 1 Bridges, SE cor. NW, Section 17-17-34, joint with The Texas Company, is drilling below 2,490 feet.

Eddy County

R. D. Compton's No. 1 Vandergriff, NW cor. NE, Section 33-19-30, in the Twin Hills district, which was abandoned at 342 feet last December, is being deepened and is running 8¼-inch casing at a total depth of 1,475 feet. It topped brown lime at 1,420 feet and elevation is 3,259 feet. Getty Oil Co.'s No. 6

(Continued on Page 102)

LICKING AND TUSCARAWAS COUNTIES EACH REPORT ONE GOOD PRODUCER

By Staff Correspondent

PITTSBURGH, Pa., Nov. 17.—The past week in the eastern fields was rather dull as far as any special interest in completed wells, as none was of unusual size and all were close to production. Of the 32 wells completed, 15 were dry holes, 8 were new oil producers with an initial production of 350 bbls., all in southeast Ohio, and nine were gas wells.

The largest well completed was in southeast Ohio and in the proven area in Section 14, Hanover Township, Licking County, where the Hope Construction & Refining Co. completed No. 3 on the Minor-O'Bannon farms. It was drilled in the Clinton sand at 2,905 feet and produced 120 bbls. the first day after shot. Another fair well was in the SE, Lot 34, Washington Township, Tuscarawas County and was No. 4 of the Gordon Oil Co. No. 3 and others on the T. B. Shearer farm. It was completed in the Niagara lime at 3,684 feet and made 110 bbls. the first day natural.

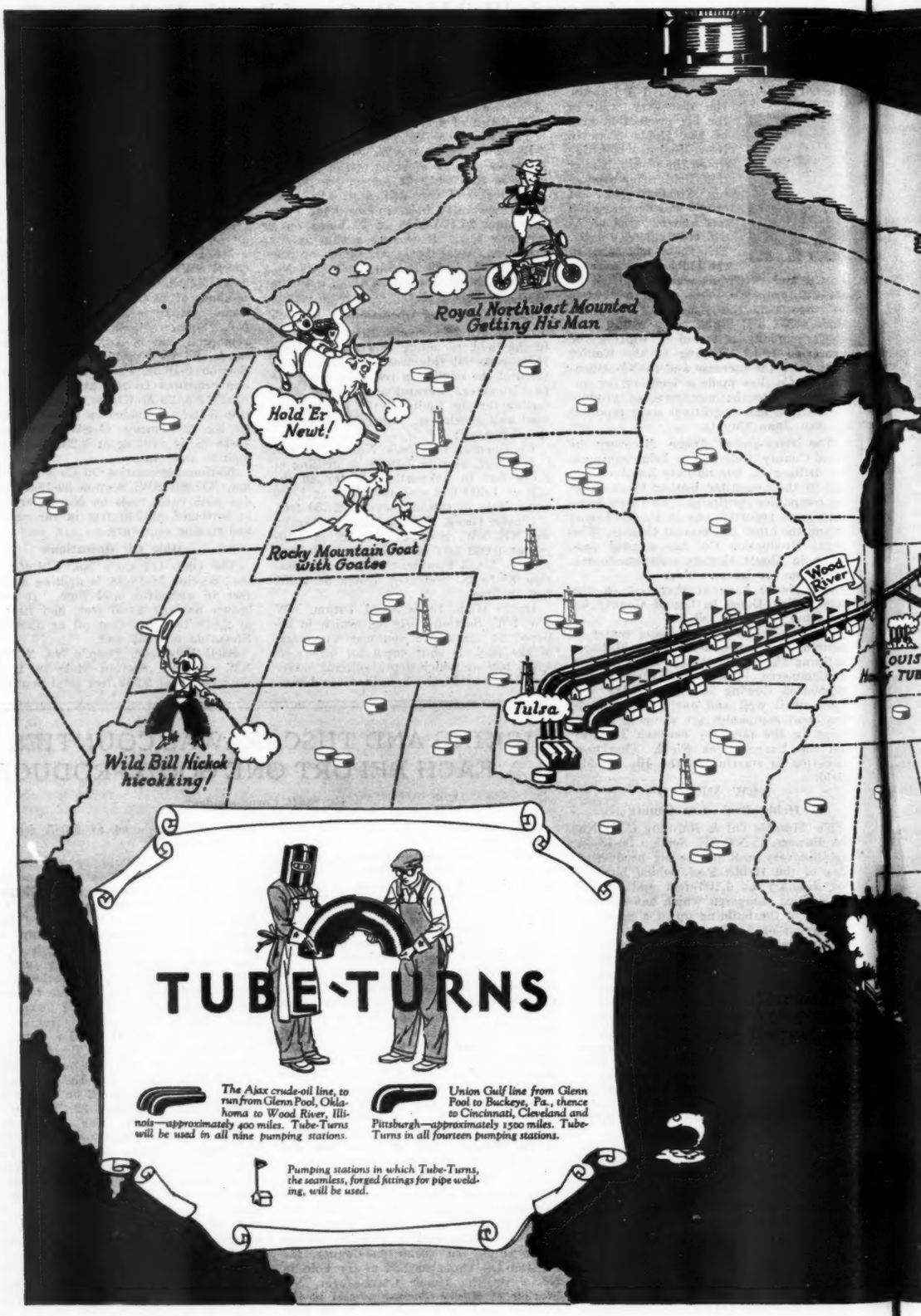
SOUTHEAST OHIO

In Ashland County, Robinson, Bode and others completed their second well on the Phillip Doererr farm. Section 16, Lake Township, and it was dry in the Berea sand. In Coshocton County, the Preston Oil Co. also had a dry hole in No. 2 on the Elmer Clark farm, NE Section 14, Perry Township, and in the Clinton sand at a depth of 3,300 feet. The Ohio Fuel Gas Co. had a similar result in its test on the Leroy Haudenschield farm, Section 9, Washington Township, Holmes County. It was drilled to a depth of 3,123 feet and in the Clinton sand. In Licking County, Ralph Brothers completed a test on the J. S. Colville farm, Section 9, Eden Township, in the Clinton sand at 2,985 feet and it was also dry.

There were several completions and fair producers in the shallow sand drilling in Medina County. E. R. Edson & Son Co. had three completions, their No. 8 on the George W. Packard No. 1 farm, Lot 4, Chatham Township, Section 13, was drilled to a depth of 368 feet and it produced 20 bbls. natural the first day. Their No. 8 on the Archie E. Packard farm, Lot 6, same township, produced 5 bbls. the first 24 hours after shot from a depth of 386 feet. Their No. 32 on the W. H. Ripley farm, Lot 1, Section 13, Chatham Township, was dry through the shallow sands to a depth of 600 feet. Curtis and Eaken also had three completions. No. 2 on the Thomas Brown, Jr. farm, Lot 22, Section 16, Chatham Township, was drilled to a depth of 406 feet and produced 5 bbls. the first 24 hours after shot. Their No. 3 on the same farm was completed at a depth of 423 feet and made 25 bbls. the first day after shot. On the Harriet Broadsword farm, Lot 21, Section 16, Chatham Township, the same operators completed their No. 3 at a depth of 400 feet and it was dry.

In Muskingum County, the Ohio Fuel Gas Co. completed a fair gas well on the John Mahaney farm, Washington Township. It was drilled in the Clinton sand at a depth of 3,723 feet and is estimated good for 750,000 feet a day. The same company completed a test on the Eli Derry farm in the NE Section 3, Perry Township, which is showing for 250,000 feet a day from the Clinton sand at 4,114 feet and the Red Rock at 4,218

(Continued on Page 120)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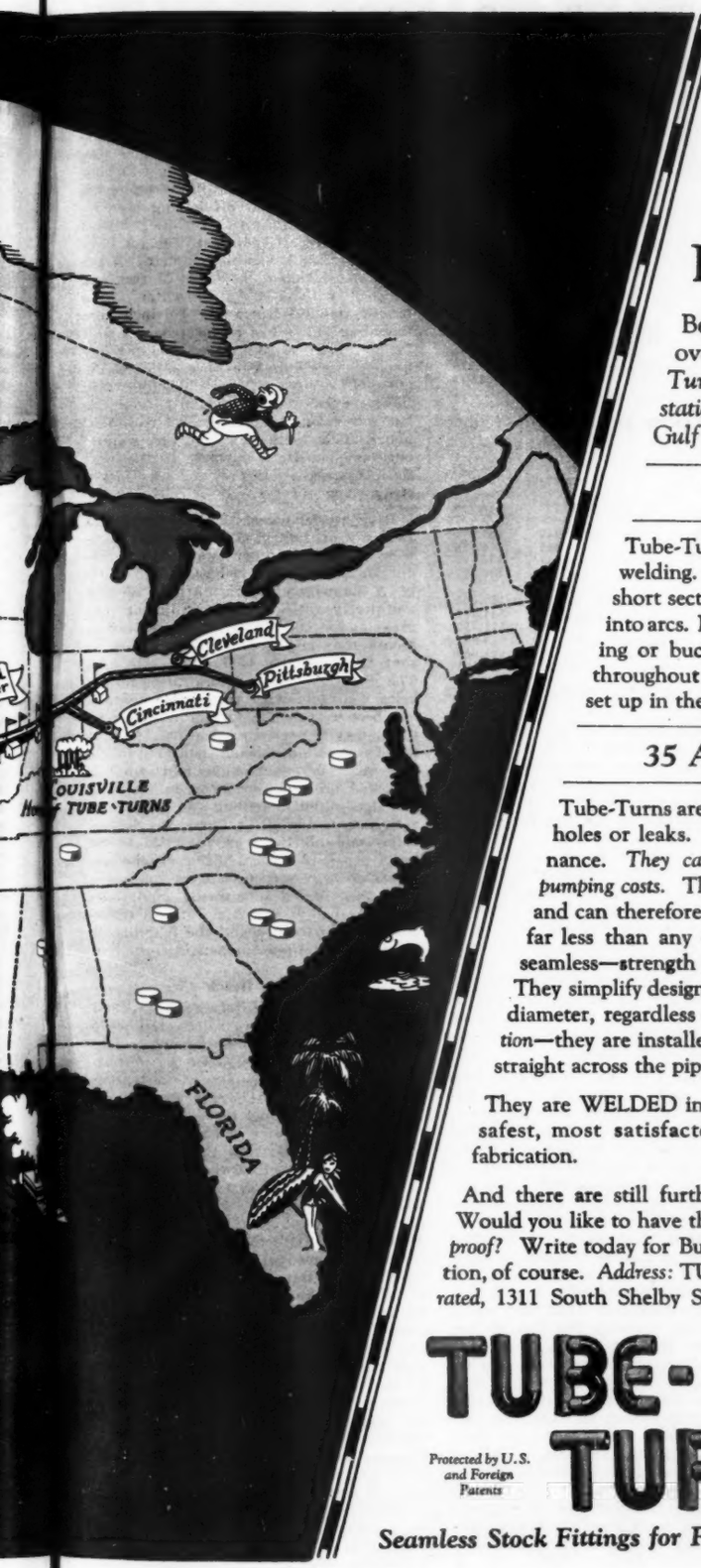

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Playa Del Rey Area Still in Spotlight

Unit Development on North Dome of Kettleman Hills Will Become Reality Early in New Year. Details Being Concluded

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Nov. 15.—The proposed unit development of the North Dome of Kettleman Hills, which has been under consideration for more than a year, will become a reality early in 1931. Final details are being worked out and the plan will become operative within a short time after its approval and signature by Ray Lyman Wilbur, Secretary of the Interior. This agreement and ratification must be concluded before January 31, 1931, in conformity with congressional action taken at the last session of Congress, which authorizes the Secretary of the Interior to give the department's sanction to the contemplated plan. The first step of the Kettleman North Dome Association, which is being organized to unify development at Kettleman Hills, will be to secure the signatures of all landowners and other interested parties and work along this line will be undertaken as soon as possible. Approximately 10,000 acres in the North Dome have been definitely proven as productive and an additional 4,000 acres as potentially productive. These 14,000 acres, of which the Standard controls approximately half, form units Nos. 1 and 2 under the double unit plan of unified development. Outside the contour line enclosing these 14,000 acres the engineering committee has selected an additional block of acreage which will be eligible for participation in the proposed unit development program in the event that subsequent drilling extends the productive limits of the field beyond the present contour enclosing the 14,000 acres of what now appears to be the productive limits. Acreage enclosed within the inner contour line cannot be later dispossessed of any participating interest but acreage outside this contour line can subsequently be added to the acreage comprising the original amount brought under unit development.

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	68,690	997,250
Fuel oil	.....	.....	.....	.....	71,950	457,175
Diesel and gas oil	181,875	25,982	179,792	25,685	3,216,037	2,364,712
Gasoline	512,371	73,196	327,013	46,716	17,157,605	18,016,157
Kerosene	.....	.....	.....	.....	.....	49,750
Naphtha distillate	.....	.....	.....	.....	.....	81,750
Coastwise—						
Crude oil	300,000	42,857	366,431	52,347	13,765,045	23,476,004
Fuel oil	887,343	126,763	291,360	41,623	15,951,666	17,069,732
Diesel and gas oil	38,048	5,435	38,059	5,123	1,478,736	1,062,186
Gasoline	403,610	57,659	244,821	34,971	11,039,390	9,574,636
Kerosene	.....	.....	.....	.....	151,436	70,286
Naphtha distillate	.....	.....	.....	.....	.....	.....
Exports—						
Crude oil	310,579	45,797	141,419	20,203	6,154,249	5,226,627
Fuel oil	321,188	45,887	151,621	21,770	15,315,153	15,856,911
Diesel and gas oil	33,154	4,736	6,010	859	3,899,830	2,356,849
Gasoline	141,491	20,213	229,271	32,753	13,934,140	10,521,310
Kerosene	59,540	8,506	.....	.....	3,145,249	2,812,045
Lubricants	.....	.....	.....	.....	27,434	.....

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC AND GULF COAST PORTS

Crude oil	.....	.....	.....	.....	.....	.....
Fuel oil	.....	.....	.....	.....	.....	.....
Diesel and gas oil	.....	.....	.....	.....	279,083	.....
Gasoline	.....	.....	.....	.....	1,080,671	2,131,183
Kerosene	.....	.....	.....	.....	.....	.....
Lubricants	.....	.....	.....	.....	27,796	138,706
Coastwise—						
Fuel oil	138,790	19,827	3,580	511	2,889,342	2,724,971
Diesel and gas oil	.....	.....	.....	.....	310,222	360,538
Gasoline	35,667	12,238	59,210	8,459	3,806,943	4,354,560
Kerosene	6,177	882	.....	.....	201,060	188,893
Exports—						
Crude oil	.....	.....	.....	.....	59,993	121,603
Fuel oil	.....	.....	.....	.....	866,296	841,631
Diesel and gas oil	.....	.....	.....	.....	457,589	326,657
Gasoline	.....	.....	164,650	23,521	3,571,126	4,970,941
Kerosene	.....	.....	13,101	1,872	570,271	528,060
Lubricants	.....	.....	.....	.....	33,579	29,795

Playa Del Rey Active

Playa Del Rey continued to occupy a prominent part in the spotlight and, judging by the status of present development work, will undoubtedly remain quite active for some time to come. A detailed check made a few days ago credited Playa Del Rey with a daily crude oil production of 42,170 bbls. This is an average daily production of 467 bbls. per well. The upper, or Del Rey zone, with 54 wells producing, is yielding 26,590 bbls. per day, an average of 492 bbls. per well. The deep Recreation zone is contributing only 15,580 bbls. per day to the field's total. The 36 wells producing in this horizon are averaging only 432 bbls. per day. The completion list was quite large this week from a numerical standpoint but the initial production by new wells was small. The largest well was the Ohio Oil Co.'s No. 6 Recreation, which came in under a natural flow doing 740 bbls. of 23.8 gravity oil and 2,900,000 feet of natural gas per day from 4,005 feet, the hole having been finished with a 6⅝-inch liner carrying 650 feet of perforated.

The Union added a new well by bringing in No. 2 Townsite, flowing 735 bbls. of 23.8 gravity oil from the deep Recreation zone at 5,674 feet. This well, with the 8⅝-inch water string landed and cemented at 5,470 feet, was finished with a 6⅝-inch liner carrying 165 feet of perforated. The company has killed No. 3 Townsite, which was given a preliminary production test about two weeks ago, and an effort is being made to ascertain the source of the water which has prevented clean production. The growing importance of the upper, or Del Rey zone at Playa Del Rey is clearly indicated this week as only four of the new wells finished were completed in this horizon. It is also significant that the largest well finished was completed in the upper sand, while the smallest well was completed in the lower zone.

The Pan Gulf Petroleum Co. successfully completed its first producer in the Playa Del Rey Field this week when No. 2 Venice, a new well, was brought in flowing 703 bbls. of 23.6 gravity oil per day from 4,234 feet, the hole having been completed with a 6⅝-inch liner carrying 693 feet of perforated. Burket & Braun finished their second producing well in this field when No. 3 Del Rey, bottomed at 4,571 feet and the 9-inch water string set at 3,555 feet, was brought in under a natural flow doing 570 bbls. of 23.4 gravity oil initially. C. W. Bland failed to secure a natural flow in his No. 1 Warden and consequently found it necessary to put this well on the beam. The initial pumping was 371 bbls. of clean 23.7 gravity oil. No. 1 Warden was bottomed at 4,281 feet and finished with a 9-inch water string landed at 3,680 feet and a 5¾-inch liner carrying 600 feet of perforated. The Superior Oil Co.'s No. 1 Moses, which has been flowing approximately 700 bbls. per day for a few months, died early this week and had to be put on a compressor. This artificial stimulation was not as productive as the natural flow as the well is only making 275 bbls. per day. The termination of the flowing period of this well will probably be attributed to partial depletion and, while this theory might be substantiated, it is significant to note that this well ceased flowing along about the time that the Union Oil Co. finished its No. 2 Townsite early in the week. These two wells are practically offsets and both were finished in the deep Recreation zone.

Barnsdall Well

The Barnsdall, which is developing the Burks lease in conjunction with the Cypress Petroleum, finished No. 13-A a day or two ago and this new well, bottomed in Schist at 5,607 feet, registered an initial of 155 bbls. per day. This new producer which topped the conglomerate at 5,530 feet, was finished with an 8⅝-inch water string landed and cemented at 5,422 feet. York & Smullin's No. 1 Jones Prentiss failed to result in a natural flow upon completion in the Del Rey zone a few days ago and it was consequently found necessary to put it on the beam. Current production approximates 175 bbls., the oil testing 23.4 degrees A.P.I. Frank D. Allen's No. 1 Venice, on the other hand, a new well bottomed at 4,210 feet with the 8⅝-inch water string landed at 3,620 feet, developed such a kick that it started flowing at the rate of 700 bbls. per day during the course of the water test. It was subsequently killed, however, and the hole is at present being cleaned out to bottom.

The Channel Oil Co. finished its first producing well in the Playa Del Rey Field when No. 1 Jo Ann was brought in flowing 510 bbls. per day from 6,219 feet, the hole having been finished with a 6⅝-inch water string landed at 5,900 feet and a 4¾-inch liner, including 268 feet of perforated. The West Coast Petroleum Co. also appears in the production column for the first time when its No. 1 Del Rey was brought in flowing 385 bbls. initially from the Del Rey zone at 4,414 feet. This new well was finished with an 8⅝-inch water string landed at 3,625 feet and a 4¾-inch liner carrying 798 feet of perforated. The Mohawk Oil Co., which has experienced exceptional success in its development program at Playa Del Rey, successfully finished well No. 2 on Lease I, a new well flowing 415 bbls. per day from 4,700 feet, the hole having been plugged back from 4,780 feet because of a gray sand encountered in the bottom of the hole. Lang & Wall's No. 2 Venice, bottomed at 4,197 feet and an 8⅝-inch water string landed at 3,533 feet, was good for 402 bbls. per day upon completion.

Other Completions

Thomas Kelly & Sons, with two producing wells to their credit, successfully finished No. 6 Prentiss, a new well flowing 272 bbls. of 23.6 gravity oil initially from 4,262 feet, the hole having been protected with a 10¾-inch water string landed at 3,485 feet. The Beverly Hills Petroleum Corp. finished two new wells this week and although only one was put on production the other should be tanking oil shortly. The company's new producer is No. 1 Venice, flowing 545 bbls. of 23.9 gravity oil per day from 4,195 feet, the water shut off having been effected with a string of 8⅝-inch landed and cemented at 3,500 feet. The La Bara Oil Co.'s No. 1 Strain, completed in the deep Recreation zone at 6,079 feet and finished with a 6⅝-inch water string landed at 5,965 feet and a 4¾-inch liner including 113 feet of perforated, was good for 402 bbls. of 23.8 gravity oil per day upon completion. The International Petroleum Co.'s No. 2 Venice blew out early in the week and subsequently took fire but was brought under control within 12 hours. This well blew out once before but occasioned no damage as the first flash a week or so previous was just a stray pocket of gas.

Recent developments indicate that Playa Del Rey operators will ratify the statewide curtailment program and curtail production in the Playa Del Rey Field shortly. A majority of operators have already tentatively ratified the curtailment program and a committee is endeavoring to secure the signature of all operators so that this field can be brought into line. The inability of operators to negotiate sales contracts with responsible refiners has been responsible for the efforts now under way to curtail production. The proposed restriction is being sponsored in the hope that major companies will establish a posted price for crude oil in the field and thus stabilize drilling and production activities. Crude oil at Playa Del Rey is being sold all the way from 25 to 80 cents per barrel. In addition to the unfavorable price structure, some producers have been forced to suspend production for several days at a time due to transportation difficulties and the inability of independent refiners to handle flush production.

Long Beach

Long Beach, California's perennial field, yielded two more substantial wells in addition to the completion of several smaller producers. Last week the western end of the field occupied the attention of operators when the Star Petroleum's No. 2 Colby indicated the discovery of a new deep productive zone below 8,480 feet and now this week the eastern end of the field monopolized the spotlight due to the completion of two large wells. These new producers were No. 77 Signal of the Dabney-Johnston Oil Corp. and the McKeon Oil Co.'s No. 7 Church. The former, bottomed at 6,058 feet and finished with a 9-inch water string landed at 5,705 feet and a 6⅝-inch liner carrying 340 feet of perforated, blew in under control flowing 2,410 bbls. of clean 27.2 gravity oil per day. This new well is within a short distance of McKeon's No. 7 Church, which came in a few days ago flowing 1,405 bbls. of clean 28.9 gravity oil initially from 7,270 feet. Admiral Oil Co. successfully finished its No. 3 Higgins flowing 620 bbls. per day from 7,500 feet, the water shut-off having been effected with a string of 6⅝-inch landed at 6,430 feet. Bush Oil Co. also chalked up a completion when No. 2 Bell was brought in doing 398 bbls. initially from 7,350 feet. Chiksan Oil Co.'s No. 1 Robertson, another well finished in the deep zone at 7,575 feet, was somewhat of a disappointment as it was good for only 132 bbls. of 28.1 gravity oil per day. J. E. O'Donnell's No. 1 Jonte was another unsatisfactory well as the initial daily production, 308 bbls. per day from 7,600 feet, showed a cut of 20 per cent. No. 1

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Signal of the Stevenson Brothers Co. was finished pumping 260 bbls. per day upon completion at 4,730 feet, the hole having been plugged back from 4,762 feet and finished with a 6⅝-inch liner.

Rosecrans Field

In the Rosecrans Field of Los Angeles Basin the Barnsdall is having considerable trouble with water in No. 2 Trust, and, while the hole has already been plugged back from 5,950 feet to 5,923 feet, it is still wet and will require further corrective work. The Union also encountered water trouble in No. 13 Rosecrans, a recent completion, but this has been corrected by plugging back from 5,923 feet to 5,888 feet. Present production of this well is 135 bbls. of clean 34.4 gravity oil per day. The St. Helens Petroleum Co. has redrilled and deepened No. 1 Walsh, a producer from 4,768 feet, to 4,784 feet, and will set pipe on bottom preparatory to carrying it on down another few hundred feet. In the West Coyote Field the Standard is reaming No. 105 Murphy and this well should be tanking oil shortly. Neither of the two deep tests in the Huntington Beach Field has encountered anything that looks like deep production, but these exploratory wells, No. 1 Fee of the Superior is at 6,885 feet, and No. 17 Huntington of the Transport Oil Co. at 6,780 feet, is definitely out of the picture. The Getty Oil is not releasing any information on its deep test at Santa Fe Springs so far as formation is concerned, although the present depth is given at 8,940 feet. The Potrero Field was visited by a fire which sent three men to the hospital when a gas explosion occurred in York & Lockhart's No. 1 Blinn. This well was being cleaned out and the fire which destroyed several adjacent storage tanks is believed to have been caused by an accumulation of gas in the cellar of the well undergoing repair.

Ventura Avenue

The Shell finished another new well in the Ventura Avenue Field when No. 63 Taylor was brought in flowing 528 bbls. of clean 30.6 gravity oil per day from the shallow sand at 4,496 feet. This well, finished with a 5¾-inch oil string, was completed on gas lift. In addition to this well, the second to be finished by the Shell at Ventura Avenue in 15 days, a check shows four other potential producers rotating in the oil sand. In the Elwood Field of Santa Barbara County, the Elwood Exploration Co. has killed and recemented well No. 8 on Permit No. 90, which was given a production test, and, while this well should be back on production shortly, completion may be delayed as the tubing was cemented in the hole. In the meantime, the Barnsdall and Rio Grande should have No. 7 Doty ready for a test as this project is rotating in the oil sand at 3,470 feet with a string of 10¾-inch landed at 3,400 feet. In the Rincon Field of Ventura County foundation has been built for N. C. Needham's initial project on Tideland permit No. 55 and rig construction is scheduled to get under way within 10 days.

Midway-Sunset

There were no developments of importance in the Midway-Sunset Field of Kern County, due principally to the fact that drilling operations have been reduced to a minimum. Work in the Mount Poso and Round Mountain Fields was equally uneventful. In the Belridge Field, the Richfield Oil Co. is setting pipe in its No. 1 Belridge in Section 22-27-20 preparatory to testing out the Temblor which was found productive by the Belridge Oil Co. in Section 26-27-20. The Texas Company and Ohio have recently spudded in new wells which will have the Temblor as their objective and two more holes are expected to get under way shortly. Additional wells are also scheduled to get under way in the Kettleman Hills North Dome as No. 2 Whepley of the Associated, No. 1 Blauvelt of the North American Consolidated, No. 1 Signal of the Richfield Oil Co. and No. 2 Huffman of the Superior are being rigged up. On the Amerada lease, the Union Oil Co. is making good progress, the hole being below the 2,100-foot level. Daily production at Kettleman Hills has been holding up in good shape, in fact the Superior's No. 1 Huffman is producing more oil now than when it came in. Production reports show the Associated's No. 1 Whepley producing 2,300 bbls. per day, Continental's No. 8 Elliott, 2,475 bbls.; Milham's No. 1 Elliott, 1,650 bbls.; Petroleum Securities Co.'s No. 1 Felix, 300 bbls.; Superior's No. 1 Huffman, 12,775 bbls., and Nos. 8, 38 and 81 of the Standard, 2,515 bbls., 1,395 bbls. and 2,175 bbls., respectively. J. J. Ritchie ran into a little mechanical trouble in his Kern County wildcat in Section 33-11-19 and progress was delayed. This test has shown such favorable indications at 4,870 feet that it is being watched with great care. This well, about 5 miles east of Wheeler Ridge in the extreme southern edge of the San Joaquin Basin, will open a new field if commercial production is secured. In the Weed Patch area, about 20 miles west of Ritchie's test, the Shell Oil Co. is making preparations to test out a second thin sand in No. 1 Porter Day but the probability of developing substantial production is not any too bright. In the Semi-

(Continued on Page 120)

DRY GAS WELL IN MOUNT PLEASANT INCREASES HOPE OF COMMERCIAL GAS

By Paul A. Elliott

MUSKEGON, Mich., Nov. 17.—Another dry gasser in the Marshall formation was the most important new development in the Mount Pleasant area during the week bringing still closer the possibility of early commercial use of natural gas wells in the Central Michigan Field.

The new gasser is the Geneva Oil Corp.'s No. 1 Nicholson. The Marshall, or it may be a stray sand, was topped at 1,350 feet and gas was struck at 1,365-75 feet when the well made about 1,000,000 feet initial production. It is located SW SW, Section 7-14n 5w, Deerfield Township, near the Broomfield Township wells but far enough away to constitute an important development.

The New York Petroleum Royalty Corp., which opened the Leaton Pool, has completed its No. 3 P. J. Marthey, SW SE SE, Section 19-15n-3w, Denver Township, Isabella County, as a 100-bbl. well in the Dundee. Limestone was struck at 3,624 feet and pay sands at 3,664-79 feet.

Isbell & Sarver's No. 1 B. Keechbauch, NE NE NE, Section 30-15n-3w, Denver Township, Isabella County, had 2,000 feet of oil in the hole and was being tested for commercial production.

Four of five new locations are in the Leaton and Chippewa Township sections of the Mount Pleasant area. The new Leaton well is the Ohio Producing & Refining Co.'s No. 4 Epple, N half SE SW, Section 19-15n-3w, Denver Township, Isabella County. The Pure Oil Co. took

(Continued on Page 115)

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, Well and location—	S.-T.-R.	Depth	Status
Union, No. 1 Orchardale, Los Angeles Co.	10- 3-11	5,750	sd. sh. drilling
Olympic Realty Corp., No. 1 Barnes, Los Angeles Co.	14- 2-15	4,470	br. sh. drilling
Taylor Oil Co., No. 1 Culver, Los Angeles Co.	12- 2-15	mtl.	building rig
Dwyer & Becker, No. 1 Compton, Los Angeles Co.	17- 3-13	4,520	cleaning out
Francis, Don, No. 1 Compton, Los Angeles Co.	8- 3-13	572	suspended
Central Oil Co., No. 1 Compton, Los Angeles Co.	28- 3-13	5,094	suspended
Combs, E., No. 1 Compton, Los Angeles Co.	16- 3-13	692	suspended
Cal. Ventura Oil Co., No. 1 Manhattan, Los Angeles Co.	30- 3-14	6,525	suspended
Cal. Ventura Oil Co., No. 1 Hermosa, Los Angeles Co.	31- 3-14	3,396	cleaning out
Cal. Ventura Oil Co., No. 2 Hermosa, Los Angeles Co.	31- 3-14	2,580	sd. sh. drilling
Cal. Ventura Oil Co., No. 3 Hermosa, Los Angeles Co.	31- 3-14	....	material
Westwood Pet., No. 1 Hermosa, Los Angeles Co.	6- 4-14	rig	suspended
McMahon & McDonald, No. 1 Watts, Los Angeles Co.	12- 3-14	4,665	suspended
McKeon Drlg. Co., No. 1 Watts, Los Angeles Co.	1- 3-14	310	sd. sh. drilling
Rio Grande Oil Co., No. 1 Watson, Los Angeles Co.	17- 4-13	6,295	suspended
Tenacity Oil Co., No. 1 Domingues, Los Angeles Co.	11- 4-13	3,580	suspended
Shell, No. 1 Van Nuys, Los Angeles	19- 2-15	5,647	cleaning out
San-Van Oil Co., No. 1 Van Nuys, Los Angeles Co.	14- 1-16	mtl.	building rig
Rio Hondo Pet., No. 1 Puente, Los Angeles Co.	14- 2-10	3,726	testing
Rucker & Smith, No. 2 Puente, Los Angeles Co.	27- 2-10	rig	rigging up
Bardeen Pet., No. 2 Puente, Los Angeles Co.	2- 2-10	rig	rigging up
Bidart Oil Co., No. 1 Puente, Los Angeles Co.	15- 2-10	3,325	suspended
Dwyer & Becker, No. 1 D.&B. No. 1 Puente, Los Ang. Co.	3- 2-10	4,620	cemented
Keck & Hall, No. 1 Puente, Los Angeles Co.	32- 2- 8	1,120	gas—shut in
Marcel Pet. Co., No. 1 Puente, Los Angeles Co.	31- 2- 8	3,100	suspended
Cudahy Oil Co., No. 1 Bell, Los Angeles Co.	30- 2-12	rig	portable equip.
Celito Oil Co., No. 1 Monterey Park, Los Angeles Co.	25- 1-12	5,278	testing
Los Gatos Oil Co., No. 1 El Monte, Los Angeles Co.	16- 1-11	2,280	suspended
Olympic Corp., No. 1 Calabasas, Los Angeles Co.	18- 1-17	5,695	fishing
Union, No. 1 Coyote Sansinena, Los Angeles Co.	30- 2-10	5,200	testing
Lamona Oil Co., No. 1 Pomona, Los Angeles Co.	34- 1- 9	985	abandoned
Graham & Loftus, No. 1 Coyote, Orange Co.	18- 3- 9	6,733	testing
Nesa Pet., No. 1 Newport, Orange Co.	21- 6-10	4,910	suspended
Hall, H. L., No. 1 Newport, Orange Co.	20- 6-10	790	suspended
Standard, No. 1 Newport, Orange Co.	26- 6-10	2,761	hd. sd. drilling
Fidelity Pet. Co., No. 1-A Murrietta, Riverside Co.	23- 7- 3	1,010	suspended
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	3,560	suspended
Imperial Valley Oil Co., No. 1 Brawley, Imperial Co.	36-11-16	3,240	suspended
McGregor Synd., No. 1 Del Mar, San Diego Co.	17-14- 2	1,265	suspended
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	12-13- 4	2,519	suspended
Borderland Oil Co., No. 1 Point Loma, San Diego Co.	30-16- 3	4,168	gr. sd. drill'ng
Carr, O. K., No. 1 Capistrano, San Diego Co.	13- 8- 8	4,800	hd. sd. drilling
Grey, H. W., No. 1 Redlands, San Bernardino Co.	25- 1- 2	2,392	suspended
San-Col Oil Co., Well No. 1, San Bernardino Co.	18- 1- 4	mtl.	building rig
Girard & Grimes, No. 1 Corona, San Bernardino Co.	3- 2- 8	1,549	suspended
Western Gulf, No. 1 Santa Ana, Orange Co.	12- 3- 8	854	redrilling

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, Well and location—	S.-T.-R.	Depth	Status
Standard, No. 1 Point Conception, Santa Barbara Co.	X- 5-34	6,670	hd. sd. drilling
Fields Gas Co., No. 1 Santa Maria, Santa Barbara Co.	8- 9-33	5,590	suspended
Western Gulf, No. 1 Santa Maria, Santa Barbara Co.	5- 9-33	4,680	sd. sh. drilling
Barnsdall, No. 1 Gato Ridge, Santa Barbara Co.	9- 8-32	5,278	cleaning out
Midwest Oil Co., No. 1 Los Alamos, Santa Barbara Co.	2- 7-33	1,502	cleaning out
General Pet., No. 1 Goleta, Santa Barbara Co.	21- 4-28	4,533	gas—shut in
General Pet., No. 2 Goleta, Santa Barbara Co.	21- 4-28	4,350	gas—shut in
General Pet., No. 3 Goleta, Santa Barbara Co.	21- 4-28	2,812	br. sh. drilling
General Pet., No. 134 Goleta, Santa Barbara Co.	21- 4-28	1,485	suspended
General Pet., No. 136 Goleta, Santa Barbara Co.	21- 4-28	1,016	suspended
General Pet., No. 137 Goleta, Santa Barbara Co.	21- 4-28	1,026	suspended
General Pet., No. 138 Goleta, Santa Barbara Co.	21- 4-28	4,931	suspended
General Pet., No. 139 Goleta, Santa Barbara Co.	21- 4-28	1,035	suspended
General Pet., No. 143 Goleta, Santa Barbara Co.	21- 4-28	1,040	suspended
Boles Oil Co., No. 140 Goleta, Santa Barbara Co.	22- 4-28	1,040	suspended
U. S. Pet., No. 141 Goleta, Santa Barbara Co.	20- 4-28	1,035	suspended
U. S. Pet., No. 142 Goleta, Santa Barbara Co.	20- 4-28	1,032	suspended
U. S. Pet., No. 143 Goleta, Santa Barbara Co.	20- 4-28	1,019	suspended
El Camino, No. 149 Goleta Tideland, Santa Barbara Co.	22- 4-28	1,035	suspended
Bolsa Chica, No. 191 Goleta, Santa Barbara Co.	24- 4-29	3,370	sd. sh. drilling
Caldwell Brown, No. 159 Goleta, Santa Barbara Co.	24- 4-29	1,040	suspended
Cochran, J. H., No. 1 Naples, Santa Barbara Co.	7- 4-29	4,460	hd. sd. drilling
Johnson, George, No. 1 Goleta, Santa Barbara Co.	X- 4-28	3,970	cleaning out
Wildcat Oil Co., No. 1 Santa Maria, Santa Barbara Co.	20-10-35	5,500	suspended
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	14- 5-27	2,345	suspended
Prairie Oil & Gas Co., No. 1 Ventura, Ventura Co.	30- 3-22	7,518	cleaning out
Rio Grande, No. 1 Lankershim, Ventura Co.	13- 4-19	1,820	cleaning out
Associated, No. 1 Rincon Creek, Ventura Co.	19- 4-24	2,080	suspended
Pure Oil Co., No. 1 S. P. Canyon, Ventura Co.	15- 4-21	2,360	testing
California Republic, No. 1 Sespe, Ventura Co.	23- 4-21	rig	suspended
Superior Oil Co., No. 1 Sespe, Ventura Co.	14- 4-21	2,600	sd. sh. drilling
Lockwood Valley Oil Co., Well No. 1, Ventura Co.	32- 8-21	235	sd. drilling
Nordon Oil Co., No. 1-A Buttonwillow, Kern Co.	7-29-24	5,182	sd. sh. drilling
Superior Oil Co., No. 1 Buttonwillow, Kern Co.	32-29-25	....	material
Federal Drlg. Co., No. 1 Buena Vista, Kern Co.	20-31-24	3,648	sd. sh. drilling
General Pet., No. 1 Belridge, Kern Co.	30-28-21	3,077	sd. sh. drilling
The Texas Company, No. 1 Belridge, Kern Co.	22-27-20	1,046	sd. sh. drilling
Richfield, No. 1 Belridge, Kern Co.	20-27-20	5,792	sd. sh. drilling
Standard, No. 1 Belridge, Kern Co.	31-27-20	rig	rigging up
Ohio Oil Co., No. 1 Belridge, Kern Co.	36-27-20	560	sd. drilling
Union, No. 1 Belridge, Kern Co.	27-28-20	....	location
Rio Grande, No. 1 Belridge, Kern Co.	18-28-22	3,680	suspended
Reward Oil Co., No. 1 Belridge, Kern Co.	34-27-20	110	sd. drilling
Shell, No. 3 Belridge, Kern Co.	24-28-20	940	suspended
Shell, No. 4 Belridge, Kern Co.	14-28-20	939	core hole
Wallace, K. C., No. 1 Belridge, Kern Co.	32-29-21	3,864	sd. sh. drilling
Rio Cal. Pet., No. 1 Shale, Kern Co.	2-27-18	2,355	sd. sh. drilling
Shell, No. 1 Weed Patch, Kern Co.	29-30-29	5,990	sd. sh. drilling
Shell, No. 2 Weed Patch, Kern Co.	29-30-29	2,041	sd. sh. drilling
Mohawk Oil Co., No. 1 Weed Patch, Kern Co.	32-30-29	2,660	sd. sh. drilling
Pet. Sec., No. 1 Edison, Kern Co.	14-29-29	3,580	redrilling
Symark Oil Co., No. 1 Edison, Kern Co.	24-29-29	2,130	suspended
Sayre, F. M., No. 1 Edison, Kern Co.	5-30-29	4,220	suspended
Standard, No. 1 Devils Den, Kern Co.	14-25-18	1,050	sd. sh. drilling
Shell, No. 1 Semitropic, Kern Co.	17-27-23	7,641	hd. sd. drilling
Moran & DeCamp, No. 1 Mojave, Kern Co.	26-10-14	714	hd. sd. drilling
Meridan Oil Co., No. 1 Antelope, Kern Co.	11- 9-15	3,560	suspended
Bardeen, H. A., No. 1 San Emidio, Kern Co.	18-10-23	1,190	suspended
Bardeen, H. A., No. 2 San Emidio, Kern Co.	10-10-23	4,177	testing
Ritchie, J. J., No. 1 Tejon, Kern Co.	33-11-19	4,894	cleaning out
Associated, No. 1 Jacalitos, Fresno Co.	22-21-15	2,377	sd. sh. drilling
Carruthers Oil Co., No. 1 Fresno, Fresno Co.	4-17-20	rig	rigging up
Panorama Oil Co., Well No. 1 San Luis Obispo Co.	7-31-21	4,019	suspended
Latin Amer. Pet., No. 1 Shandon, San Luis Obispo Co.	21-27-15	4,525	will test
Paso Robles Synd., No. 1 Creston, San Luis Obispo Co.	21-27-11	3,941	suspended
Continental, No. 1 San Miguel, San Luis Obispo Co.	26-25-11	777	sd. sh. drilling
Schilling, C., No. 1 Atascadero, San Luis Obispo Co.	24-28-12	880	suspended
Pismo Dome Oil Co., No. 1 Edna, San Luis Obispo Co.	5-31-13	3,010	suspended
Firemans Pet., No. 1 Pismo, San Luis Obispo Co.	13-32-13	rig	rigging up
Standard, No. 1 King City, Monterey Co.	23-22- 7	5,740	cleaning out
Brown, F. A., No. 1 Parkfield, Monterey Co.	15-23-14	816	suspended
O'Donnell, J. E., No. 1 Dudley Ridge, Kings Co.	7-23-20	1,635	gas well—idle
Murphy Oil Co., No. 1 Dudley Ridge, Kings Co.	20-23-20	994	sd. sh. drilling
Kettleman Lakeview, No. 1 Tulare Lake, Kings Co.	11-23-19	1,050	cleaning out
Knudson & Smith, No. 1 Reef Ridge, Kings Co.	36-23-17	mtl.	building rig
Wellport Oil Co., No. 1 Devils Den, Kings Co.	9-24-17	3,940	suspended
Twin State Oil Co., No. 1 Point Arena, Mendocino Co.	14-12-17	5,040	sd. sh. drilling
Orinda Pet., Well No. 1 Contra Costa Co.	32- 1- 3	732	hd. sd. drilling
White, Roy, No. 1 Pixley, Tulare Co.	8-23-26	4,495	suspended
Campbell Oil Co., No. 1 Porterville, Tulare Co.	22-22-27	857	suspended
Terra Bella Oil Co., No. 1 Porterville, Tulare Co.	35-22-27	918	suspended
Western Oil Co., No. 1 Porterville, Tulare Co.	35-22-27	1,022	testing
Mills & Wilson, No. 1 Porterville, Tulare Co.	35-11-27	913	suspended
Jennings Synd., No. 1 Porterville, Tulare Co.	8-23-28	510	suspended
Terra Bella Drlg. Co., No. 2 Porterville, Tulare Co.	34-22-27	920	cleaning out
Jaques Oil Co., No. 1 Porterville, Tulare Co.	34-22-27	914	suspended
Hallock, William, No. 1 Porterville, Tulare Co.	34-22-27	1,090	suspended
Kern Pet. Co., No. 1 Porterville, Tulare Co.	34-22-27	1,184	suspended
Miller & Sylvan, No. 1 Porterville, Tulare Co.	11-23-27	1,030	sd. sh. drilling
Larson Oil Co., No. 1 Porterville, Tulare Co.	11-23-27	1,160	suspended
Larson Oil Co., No. 2 Porterville, Tulare Co.	11-23-27	124	suspended
Kettleman Trust, No. 1 Porterville, Tulare Co.	21-22-27	940	reaming
Lewis, Paul M., No. 1 Porterville, Tulare Co.	15-22-27	1,118	testing
Turk & Campbell, No. 1 Porterville, Tulare Co.	34-22-27	1,352	cleaning out
Roetner Oil Co., No. 1 Porterville, Tulare Co.	34-22-27	1,252	sd. sh. drilling
Wells & Armstrong, No. 1 Porterville, Tulare Co.	10-22-27	210	suspended
Enterprise Oil Co., No. 1 Porterville, Tulare Co.	29-23-28	660	hd. sd. drilling
Inland Valley Oil Co., No. 1 Visalia, Tulare Co.	24-17-24	2,060	reaming
Colusa Oil Co., No. 1 Bush, Colusa Co.	31-15- 4	761	hd. sd. drilling
Getty Oil Co., No. 1 Nigger Heaven, Yolo Co.	23-12- 3	2,050	suspended

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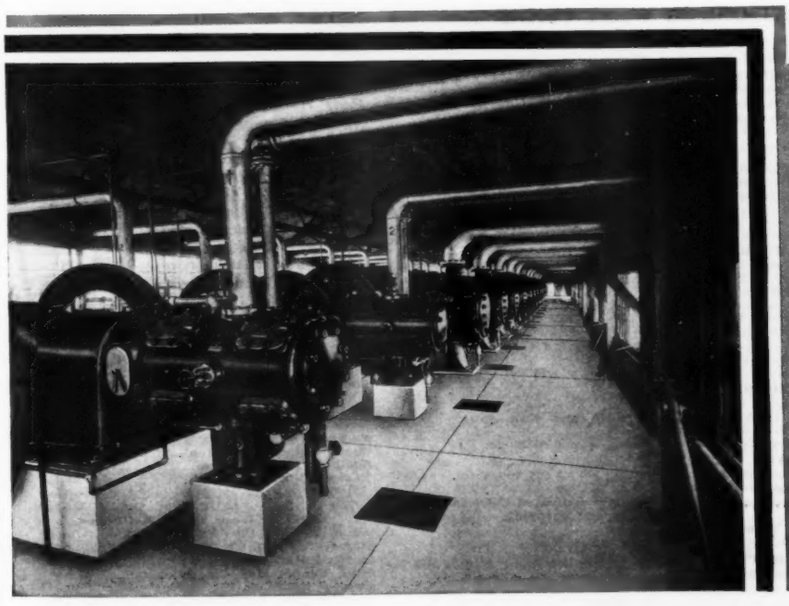


Humble Oil & Ref. Co. Yates Pool plant, making 25,000 gallons per 24 hours.

CLARK

COMPRESSORS

Watching Tubing of Big Lake Wells

Production Men and Engineers Interested in Difficult Task. Scarborough and O'Brien Pools Extended. New Irion County Test

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Nov. 17.—Tubing of the seven deep wells in the Big Lake Field, Reagan County, by their owners, the Texon Oil & Land Co. (Continental Oil Co.) and Big Lake Oil Co. is attracting considerable attention, and many production men and engineers of other companies will no doubt make the trip to the field to see the work done. Spang, Chalfant & Co.'s 9.3-pound tubing will be used in the wells which are all producing from below 8,400 feet, the deepest being Big Lake Oil Co.'s No. 3-C which was bottomed at 8,923 feet. The highest gas production of any of the deep wells is now running around 45,000,000 feet per day from Big Lake Oil Co.'s No. 4-C University. This well is also the largest oil producer, making better than 4,000 bbls. per day.

The great depth of the producers, pressure and other things to be taken into consideration in tubing the wells make this a special task in which great care will have to be exercised to prevent trouble that might be difficult to handle, and the companies doing the work will have been the first to undertake such a task. The Southern States Co. has contracted to tube Texon Oil & Land Co.'s No. 2-B University first. This well is producing around 1,900 bbls. per day at a total depth of 8,489 feet, making approximately 21,000,000 feet of gas per day with 950 pounds back pressure.

The seven deep wells of the Big Lake Field produced a total daily average of 14,940 bbls. during the week, apportioned as follows:

Texon Oil & Land Co.'s No. 1-B University, 2,890 bbls. with 23,636,285 feet of gas. No. 2-B produced 2,012 bbls. with 23,034,285 feet of gas. No. 3-B produced 1,800 bbls. with 20,281,285 feet of gas. Big Lake Oil Co.'s No. 1-C produced a daily average of 1,442 bbls.; No. 2-C produced 2,527 bbls.; No. 3-C produced 170 bbls. and No. 4-C produced 4,049 bbls.

It will take about 30 days to tube all of the wells by the two groups of experts who will do the job, and the Railroad Commission was expected to extend the time in which the wells have to be tubed, but Chairman Neff is opposed to any such extension.

Leck Pool Limits

Empire Gas & Fuel Co.'s No. 1-C Daugherty in Section 16, Block 74, a south offset to Atlantic Oil Producing Co. and Maxwell's late extension well of the Leck Pool, Winkler County, has marked the southern limits of that pool by being plugged at a total depth of 3,200 feet after an increase in sulphur water was picked up from 3,100-3,200 feet.

Magnolia Petroleum Co.'s No. 1 Scarborough in Section 1, Block 77, three-fourths of a mile southwest of the Scarborough Pool in northern Winkler County, is now shut down at 2,860 feet producing about 100 bbls. of oil daily, and extending this pool in the direction of the Leck and Hendricks Pools. The first oil in this test was logged at 2,860 feet. Elevation is 2,912 feet. Gravity of the oil in this well and pool runs around 37.1 degrees.

Another edge well of the Magnolia Petroleum Co. is in Section 46, Block F, G.M.M.B.&A. Survey, approximately 4 miles west of the O'Brien Pool in Ward County. Last week it looked as if it would make only a small gasser after a 30-quart shot, but this week it was drilled deeper to 3,056 feet in white lime and has been flowing around 85 bbls. per day thereby proving the lease which was depending upon a producer to hold it.

Pure Oil Co.'s No. 1 Harrison in Section 203, Block 3, T.&P. Survey, western Pecos County, an interesting test for this part of Pecos County and the Permian Basin, was drilling at 4,660 feet in black lime and slate. This test is supposed to be located on one of the most likely looking structures in the county, and is considered as having good possibilities for production of oil.

Howard County Wildcat

Greene Oil Co. and Getty Petroleum Co.'s No. 1 Denman in the E half NE, Section 14, Block 30,, Township 1-S, T.&P. Survey, eastern Howard County, was shot with 60 quarts from 2,790-2,816 feet this week and is now cleaning out at a total depth of 2,826 feet, with 1,600 feet of oil in the hole, and no water showing. This well is in a wildcat area which was opened a few months ago by the Sinclair Oil & Gas Co. on its Dodge estate lease, and the nearest production is several miles east across the line in Mitchell County.

Irion County is to get a deep test by the Dixie Oil Co. in Section 1,196, T.C. R.R. Survey, 1,320 feet from the south and east lines of the section. This is on the W. H. Williams farm in wildcat territory and will be interesting due to the fact that there is now one shallow producing pool about 3 miles southwest of the town of Mertzon, and other deep tests in the county have had good showings of oil. The best showing was found in the Kingwood Oil Co.'s No. 1 Suggs around 3,300 feet. This test was about 3 miles due north of Mertzon. The Dixie Oil Co.'s test will try to pick up the pay horizon found in the Kingwood test, and will also seek other horizons expected to be found in the county. It is about 12 miles southwest of Mertzon.

Winkler Potential

Winkler County's potential for the period from November 15 to 30 was given as 126,243 bbls. daily. Daily outlet, according to the new schedule agreed upon at a meeting of operators at Fort Worth last week, is 60,000 bbls. Heretofore it has been 80,000 bbls.

Total potential production of Crane-Upton has been placed at 47,154 bbls. daily from 585 wells. Total allowance for the district is 29,000 bbls daily. This potential covers the period from November 15 to 30, 1930.

West Texas took a drop of 4,845 bbls. per day during the week, bringing the week's total down more than 30,000 bbls.

There were only three wells completed in the district for the week, one a semi-wildcat about a mile northwest of the Noodle Creek Pool in Jones County. This well is C. R. Pope and others' No. 1 Swann in the I. Miley Survey. It topped the Noodle Creek lime at 2,508 feet and the pay at 2,516-18 feet, logging an increase at 2,535-42 feet. It made an initial production of around 100 bbls. at a total depth of 2,539 feet, and marked an extension to the Noodle Creek Pool.

In David Donoghue's preliminary survey showing the demand of crude from the various districts for the 60-day period starting November 27, West Texas showed 283,550 bbls. production November 1, and nominations were around 203,177 bbls. per day. The estimated demand (made by Mr. Donoghue because of some nominations not yet submitted) is 46,690 bbls., making total nominations around 249,877 bbls. per day.

COMPLETIONS IN WEST TEXAS

Ector County

Amerada Petroleum Corp. and others' No. 4 University, top pay 3,600 feet, increases 3,635-40 feet and 3,658-65 feet, shot with 180 quarts from 3,591-3,681 feet, initial production 198 bbls. in 24 hours, total depth 3,691 feet.

Howard County

Merrick and Lamb's No. 16 H. R. Clay, oil sand 1,795-1,823 feet, 1,868-73 feet, and 1,888-93 feet, initial production 34 bbls., total depth 1,919 feet.

Jones County

Pope and others' No. 1 Swann, top pay 2,534-39 feet, initial production 750 bbls., total depth 2,539 feet.

Ector County

Gulf Production Co.'s No. 3-B Connell, top pay 3,490 feet, initial production 124 bbls., total depth 3,700 feet.

Crane County

Gulf Production Co.'s No. 85 McElroy, top pay 2,791 feet, initial production 465 bbls., total depth 2,972 feet.

Upton County

Gulf Production Co.'s No. 1 Sanger, top pay 2,693 feet, shot with 130 quarts from 2,693-2,742 feet, initial production 25 bbls., total depth 2,972 feet.

WEST TEXAS PRODUCTION
Week Ending November 15

County—	No. wells	Bbls.
Andrews	2	111
Crane	370	28,625
Crockett	49	1,760
Ector	74	5,145
Fisher	8	1,792
Garza		28
Howard-Glasscock	530	29,370
Irion	7	70
Jones	73	1,415
Loving	31	275
Mitchell	148	2,160
Pecos	512	106,135
Reagan	253	26,162
Runnells	3	9
Scurry	5	10
Taylor	3	126
Upton	252	7,750
Ward	45	3,685
Winkler	593	61,370
Total production this week		276,048
Total production last week		280,893
Decrease		4,845

Runs Through Trunk Lines

Company, size, location—	Bbls.
Atlantic, 10-inch, Houston	23,328
Gulf, 10-inch, Ranger	31,893
Humble, 2-8-inch, San Angelo	37,356
Humble, 10-12-inch, Station "A"	44,883
Illinois, 2-8-inch, Del Rio	34,057
Magnolia, 8-inch, De Leon	36,367
Pasotex, 8-inch, El Paso	9,792
Shell, 10-inch, Healdton	29,089
Shell, 10-inch, Houston	28,864
Texas, 12-inch, Houston	20,521
Total	288,650

Runs to West Texas Refineries

Amarillo Ref. Co., Pyote	none
Big Spring Ref. Co., Big Spring	1,477
Burford Ref. Co., Pecos	2,470
Blue Bonnet Ref. Co., Wickett	none
Cosden Ref. Co., Big Spring	9,317
Col-Tex Ref. Co., Colorado	7,000
Great Western Ref. Co., Big Spring	2,820
Humble Oil & Ref. Co., McCamey	893
Richardson Ref. Co., Big Spring	none
Tonkawa Ref. Co., Pyote	340
Wickett Ref. Co., Wickett	175
Total	24,492

Tank Car Shipments

Texas Pacific C. & O. Co. from Hurdle	1,545
Fox and Thorsen from Mertzon	none
Thomas-Brann from Grant City	none
Reagan County Pur. Co. from Texon	none
Orient from Hurdle	50
Southern Crude Oil Pur. Co. from Wickett	19,600
Midwest Ref. Co. from Hobbs	none
Total	21,195
Total daily average distribution	334,337
Total daily average production (including Lea County, New Mexico)	312,179
Daily average from storage	22,158

WILDCAT OPERATIONS IN WEST TEXAS

Week Ended November 17

ANDREWS COUNTY

Company, well, farm name, section and block—	Remarks—
Fuhrman Pet. Corp.'s No. 1 Ford, 440 ft. from S and 2,200 ft. from W of Sec. 16, Blk. A-43, Public School Land	Flowing 100 bbls. oil per day; total depth 4,613 ft.; plugging back.
Deep Rock Oil Co. et al's No. 1 Kuykendall, 2,310 ft. from N and E of SW cor. Sec. 34, School Blk. A-46	Building rig.
Deep Rock Oil Co. et al's No. 1 King, 330 ft. from N and 2,310 ft. from E, Sec. 11, Blk. A-46	Top pay 4,335 ft.; flows every 4 days; temporarily abandoned; total depth 4,454 ft.

BREWSTER COUNTY

Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor. Sec. 45, Blk. G-15, G.C.&S.F. Sur.	Shut down 1,935 ft.
E. L. Chapman's No. 1 Skinner, C SW SE Sec. 100, Blk. 2, G.C.&S.F. Sur.	Shut down 1,302 ft.
Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 930 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.& S.F. Sur.	Shut down 2,510 ft.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 miles S of Alpine	Shut down 1,750 ft.

CONCHO COUNTY

Beesley et al's No. 1 S. Waring Est., 1,320 ft. from S and E of A. T. Robinson Sur., Abst. 2,120 ft.	Spudded and shut down.
Turner et al's No. 1 Borsig, 150 ft. from S of NE cor. G. Emmig Sur. 130, 6 miles W of Paint Rock	Cleaning out 1,520 ft.

CRANE COUNTY

Cranfill Bros. and Gulf's No. 1 J. B. Tubb, 2,310 ft. from N and 330 ft. from E of Sec. 8, Blk. B-27, Public School Land	Making estimated 7,000,000 ft. of gas and spraying.
Cranfill Bros.' No. 1 Muir, 330 ft. from N and 2,310 ft. from W, Sec. 33, Blk. B-37, Public School Land	Drlg. 3,744 ft.

CROCKETT COUNTY

Dieringer et al's No. 1 Banscorew estate, 330 ft. from N and 2,310 ft. from W of Sec. 27, Blk. HH, G.C.&S.F. Sur.	Spudding.
Doleman & Moore's No. 1 Perner, 3,135 ft. from N and 1,485 ft. from E of Sec. 36, Blk. 2, I.&G.N. Sur.	Spudded and shut down.
Magnolia Pet. Co.'s No. 2 Hoover, 2,310 ft. from S and 335 ft. from E of Sec. 2, Blk. FF, B.&B. Sur.	Swabbing and bailing 6 bbls. oil per day; total depth 2,956 ft.
Taylor-Link Oil Co.'s No. 1 Mary Bullock et al, 330 ft. from N and E of Sec. 41, T.C. Sur.	Shut down 515 ft.

CULBERSON COUNTY

Grisham & Hunter's No. 2 Garren, 2,475 ft. from S and 1,566 ft. from E, Sec. 20, Blk. 89, Public School Land	Shut down 1,520 ft.; show oil 1,400-15 ft.
Kornrumpt et al's No. 1 Garren, 330 ft. S and W, Sec. 15, Blk. 79, Public School Land	Drlg. 1,050 ft.

DAWSON COUNTY

Albaugh et al's No. 1 Robinson, C NW Sec. 46, Blk. M, H.L.&R.R. Sur.	Moving in tools.

ECTOR COUNTY

C. F. Davis et al's No. 1 Hendricks, C SW Sec. 46, Blk. 42, Twp. 2s, T.&P. Sur.	Shut down 4,850 ft.

(Continued on Page 97)

Hearing on Proration in Panhandle

David Donoghue Presents Report on Statewide Nominations. Sullivan Area Likely Not Separated

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Nov. 17.—A stormy session was held at the Texas Hotel, Fort Worth, November 15, when operators and members of the Railroad Commission convened to discuss proration of the Panhandle, one of the main battle grounds in the fight for equitable state-wide proration, and the commission was left with another situation to take under advisement.

Many questions were fired at David Donoghue, technical advisor, questions dealing with potential and actual production waste, storage and other pertinent matters connected with the industry throughout Texas and the rest of the world. Mr. Donoghue estimated reasonable potential of the Panhandle district as running close to 120,000 bbls. per day with an estimated outlet of 69,810 bbls. per day with proration fixed at 80,000 bbls. per day. He also stated that there were 18,000,000 bbls. of oil in storage in the Panhandle and 145,000,000 bbls. in storage in the State of Texas.

The question of waste again came up and it was shown that storing of oil constituted waste.

Sullivan Area

The Taconian or Sullivan area in the western part of Gray County was discussed in regard to setting up a separate proration plan for this area, but this was thought needless due to the fact that it looks as if some of the wells now drilling would either be dry or only gas wells, and therefore the area would prorate itself because of lack of oil producers. The discovery well on the Sullivan ranch came in for a 9 000-bbl. well, and if others now drilling all proved as good producers the pool would have reached large proportions and increased the daily average of the Panhandle by a large amount, but it is now felt this will not be the case, and segregation of the new area is unnecessary.

Under Mr. Donoghue's survey the Panhandle district showed production of November 1 at 81,150 bbls. per day. New nominations, for the 60-day period commencing November 27, are given as 61,350 bbls. per day, and an estimated amount was named as 18,466 bbls. per day, making total nominations running near 79,816 bbls. per day.

The West Central Texas or Ranger district showed a daily average of 47,400 bbls. as of November 1 with nominations named as 33,704 bbls. and estimated nominations 600 bbls., making a total of 34,304 bbls. per day for the next 60-day period. North Texas showed 63,100 bbls. production per day as of November 1. Nominations were named as 31,832 bbls. per day from this district, with 6,015 bbls. per day named as estimated nominations, making a total of 57,847 bbls. per day for the district.

Mr. Donoghue's report showed a total production of 780,250 bbls. per day for the State of Texas as of November 1, with nominations for the next 60-day period as 596,454 bbls., and estimated nominations as 122,446 bbls., making total nominations 718,900 bbls. per day for the whole State. This last amount is 61,350 bbls. less per day than the daily average production of the State as of November 1, 1930.

Decline in Panhandle

The Panhandle district registered a big slump in production this week, falling off 9,290 bbls. per day, from 84,350 bbls. to 75,060 bbls., making a drop of over 65,000 bbls. for the week. The Wichita Falls district also took a drop, showing 2,171 bbls. per day less than it did the previous week. Many wells were completed in the latter district during the week, but many were abandoned as dry while others were of no consequence so far as oil production was concerned, therefore they did not add to production.

The Kisinger Pool in Young County was apparently defined to oil production on the northeast this week when Fred Barron's No. 2 Kisinger in the J. Connor Survey, came in for an initial production of 15,000,000 feet of gas with 490 pounds rock pressure at a total depth of 2,516 feet. The Kisinger sand was logged from 2,505-16 feet.

The Jacobs Pool, northwest of the town of Pilot Point, in southeastern Cooke County, does not look at all promising since several tests in the area have proved disappointments in the way of dry holes, and another was abandoned this week as dry. Lloyd Oil Corp.'s No. 1 Jacobs was the last to be plugged. Total depth was 1,800 feet.

The Texas Pipe Line Co. completed its gathering system and a 4-inch discharge line out of the Newcastle Pool in north Young County and started running oil through it November 11. The company connected to the E. R. Riggs and Cliner and Riggs leases, and other leases in the pool and is running a total of 3,475 bbls. per day out of the pool.

Runs to Refiners

The following is a list of daily average runs to refineries in the Wichita Falls district, for first 10 days in November:

Name of refinery and location—	Amount (bbls.)
Archer Refining Co., Megargle	125
Dale Oil & Refining Co., Electra	2,977
Olney Refining Co., Olney	2,184
Primrose Refining Co., Wichita Falls	1,729
Southland Refining Co., Olney	51
Taxman Refining Co., Wichita Falls	1,812
Panhandle Oil & Refining Co., Wichita Falls	2,960
Falls Refining Co., Wichita Falls	903
Iowa Park Refining Co., Iowa Park	1,503
Waggoner Refining Co., Electra	2,908
Tidal-Western Ref. Co., Burkburnett	1,871
Gratex Refining Co., Graham	17
Total	19,040

The American Refining Co., Wichita Falls, received 987 bbls. per day from southern Oklahoma.

There are now four wells shut down on top of the Burkett sand in the Burkett area, Coleman County, where the Arcadia Oil & Refining Co. brought in a good well several weeks ago, extending production farther south in the pool. There are three producers in the new area, and several other tests are drilling. The wells are shut down on top of the sand for want of pipe line connections. The three producers are running their oil to storage and have no pipe line connections. One well three-fourths of a mile southeast of production has been abandoned as dry at a total depth of 1,636 feet. It belonged to the Prairie Oil & Gas Co. and was on the Burns farm in the A. White Survey.

COMPLETIONS IN PANHANDLE DISTRICT

Gray County

Magnolia Petroleum Co.'s No. 2 Cubine, top pay 2,270 feet, initial production 35,000,000 feet of gas, total depth 2,330 feet. Cockrell-McIlroy Oil Co.'s No. 4 Castleberry, top pay 3,185 feet. Shot 200 quarts 3,185-3,273 feet, initial production 190 bbls., total depth 3,278 feet. Operators Royalty & Production Co.'s No. 1 Arnold, top pay 3,200 feet, shot 70 quarts, initial production 240 bbls., total depth 3,250 feet. Same company's No. 6 Harrah, top pay 3,010 and 3,165 feet, shot 70 quarts 3,140-3,200 feet, initial production 500 bbls., total depth 3,210 feet. Skelly Oil Co.'s No. 2 Vicars, shot 200 quarts from 3,193-3,261 feet, initial production 500 bbls., total depth 3,261 feet.

Hutchinson County

Phillips Petroleum Co.'s No. 1 Pease, shot 60 quarts from 3,080-95 feet, initial production 32 bbls., total depth 3,100 feet.

Potter County

Canadian River Gas Co.'s No. 1-A McBride estate, initial production 40,000,000 feet of gas from 2,035-40 and 2,150-75 feet, total depth 2,175 feet.

Gray County

Gulf Production Co.'s No. 2 Thompson, top pay 3,220-64 feet, initial production 234 bbls., total depth 3,264 feet.

NORTH TEXAS PRODUCTION

Week Ending November 15

Panhandle district—	
Carson County	6,300
Hutchinson County	15,215
Gray County	52,710
Moore County	245
Potter County	0
Wheeler County	590
Total production this week	75,060
Total production last week	84,350
Decrease	9,290
Wichita Falls district—	
Archer County	14,210
Baylor County	949
Clay County	650
Cooke County	3,156
Foard County	138
Jack County	1,976
Haskell County	36
Montague County	5,734
Throckmorton County	711
Wilbarger County	16,970
Wichita County	22,734
Young County	10,451
Total production this week	77,705
Total production last week	79,876
Decrease	2,171
Ranger district—	
Brown County	5,296
Callahan County	3,006
Coleman County	2,827
Comanche County	1,074
Palo Pinto County	476
Eastland County	4,201
Shackelford County	5,433
Stephens County	5,374
Total production this week	27,697
Total production last week	27,924
Decrease	227

COMPLETIONS IN NORTH CENTRAL TEXAS

Archer County

George Abercrombie's No. 1 Wells, dry and abandoned, total depth 1,353 feet. Bridwell Oil Co.'s No. 1 Falls, dry and abandoned, total depth 1,265 feet. H. P. Key and others' No. 1 Fish, dry and abandoned, total depth 1,450 feet. Panhandle Refining Co.'s No. 2 Snider, dry and abandoned, total depth 802 feet.

Cooke County

Deep Rock Oil Co. and Faith Oil Corp.'s No. 2 Lawson, oil sand 1,342-44 and 1,346-53 feet, initial production 20 bbls., total depth 1,361 feet.

Grayson County

Sherman Oil Co.'s No. 2 Dalton, oil sand broken 920-33 feet, initial production 33 bbls., total depth 933 feet.

Denton County

Lloyd Oil Corp.'s No. 1 Jacobs, dry and abandoned, total depth 1,800 feet.

Throckmorton County

Moore and Edward's No. 1 Parrott, dry and abandoned, total depth 780 feet.

Young County

W. F. Brazelton and others' No. 1 McComas, dry and abandoned, total depth 520 feet. Bridwell Oil Co.'s No. 1 Bloodworth, dry and abandoned, total depth 938 feet. W. L. Denniger's No. 1 Coleman, dry and abandoned, total depth 1,035 feet. P. F. Gwynn's No. 2 Jeffery, oil sand 706 feet, initial production 320 bbls., flowing, total depth 728 feet. Independent Oil & Gas Co.'s No. 15 Larimore, location abandoned. Julian Oil Co. and Stripling's No. 11 Larimore, location abandoned. R. Kink Co. and others' No. 2 Kirkland, oil sand 725-30 feet, initial production 82 bbls., total depth 730 feet. Lloyd Oil Corp.'s No. 1 Marshall, dry and abandoned, total depth 630 feet.

(Continued on Page 101)

WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending November 17

CARSON COUNTY

Company, well, farm name, section and block—	Remarks
Empire G. & F. Co.'s No. 1 Jordan et al, C SE, Sec. 94, Blk. 4, I.&G.N. Sur.	Drlg. 1,900 ft.
Empire G. & F. Co.'s No. 1 Simms, 2,310 ft. N, 990 ft. E, N½, Sec. 12, Blk. 7, I.&G.N. Sur.	Drlg. 3,145 ft.
Gibson Oil Corp.'s No. 1 Foster & Co., C NW, Sec. 24, Blk. 7, I.&G.N. Sur.	Drlg. 2,070 ft.
Plains Holding Co.'s No. 1 McConnell, C NW, Sec. 45, Blk. 4, I.&G.N. Sur.	Drlg. 2,275 ft.
Krebs & Barnard's No. 1 Barnard, 660 ft. S and W, NW, Sec. 24, Blk. 4, I.&G.N. Sur.	Drlg. 935 ft.
Lone Star Gas Co.'s No. 1 McConnell, C SE SW, Sec. 65, Blk. 4, I.&G.N. Sur.	Spudded.
Magnolia Pet. Co.'s No. 1 Burnett, 330 ft. N and W, W½ NW, Sec. 101, Blk. 4, I.&G.N. Sur.	Drlg. 510 ft.
Plains Holding Co.'s No. 2 McConnell, C S½ NE, Sec. 46, Blk. 4, I.&G.N. Sur.	Drlg. 500 ft.
Plains Holding Co.'s No. 3 McConnell, N½ NW, Sec. 46, Blk. 4, I.&G.N. Sur.	Rig on ground.
North American O. & G. Co.'s No. 1 McEwen, C SE, Sec. 1, Blk. 4, I.&G.N. Sur.	Drlg. 2,145 ft.
Texas Interstate P. L. Co.'s No. 1 Burnett, C W 160 ac., SW, Sec. 84, Blk. 5, I.&G.N. Sur.	Rotary rig.

CHILDRESS COUNTY

C. L. Sloane et al's No. 1 B. P. Smith, Sec. 49, F. P. Knott lands	T.D. 5,000 ft.

COLLINGSWORTH COUNTY

Dixon et al's No. 1 Bell, 330 ft. N, 1,320 ft. W, Sec. 102, Blk. 21, H.&G.N. Sur.	Drlg. 510 ft.

GRAY COUNTY

Amalgamated German-American Oil Co.'s No. 1 Webb, 330 ft. S and W, E½ NW, Sec. 12, Blk. A-9, H.& G.N. Sur.	G.W. pay 2,912-15 ft; C.O. after 500-qt. shot; S.D. 2,915 ft.
British-American Oil Co. and Shell Pet. Corp.'s No. 1 Smith, 330 ft. S and E, NW, Sec. 138, Blk. 3, I.& G.N. Sur.	Location.
British-American and Shell Pet. Corp.'s No. 2 Richardson, 330 ft. NE W½ NE, Sec. 127, Blk. 3, I.&G.N. Sur.	Drlg. 3,205 ft; show oil and gas 3,170-95 ft.
Beck's No. 1 Sullivan, 330 ft. N and E, W½ NW, Sec. 135, Blk. 3, I.&G.N. Sur.	Drlg. 2,265 ft.
Brown et al's No. 1 Duncan, 330 ft. S and E, NW, Sec. 93, Blk. 3, I.&G.N. Sur.	Fishing 600 ft.
Cockrell-McIlroy's No. 2 Allam, 330 ft. N and W, E½ NE, Sec. 127, Blk. 3, I.&G.N. Sur.	T.P. 3,260 ft; T.D. 3,280 ft; fishing pipe.
Cockrell-McIlroy Oil Co.'s No. 1 Harbaugh, 1,263 ft. N. 330 ft. W, Lot 182, Sec. 114, Blk. 3, I.&G.N. Sur.	Standardizing 3,227 ft.
Cree & Hoover's No. 1 Call, 330 ft. N and W, SW, Sec. 105, Blk. 3, I.&G.N. Sur.	Rotary rig.

(Continued on Page 97)

Pipe Line Construction News

U. S. STEEL CORPORATION REPORT QUITE FAVORABLE

By B. E. V. Luty

PITTSBURGH, Pa., Nov. 17.—Steel production in general has been decreasing since August, when there was a slight gain over July. The rate of ingot production at the beginning of September was in the neighborhood of 57 per cent of capacity as ascertained for January 1, this month opening with a rate slightly under 50 per cent while the rate this week is no doubt somewhat under 45 per cent. December may average around 35 per cent as seasonal decrease occurs late in the year. Some sort of picking up is practically certain after the turn of the year, on seasonal grounds, but nothing like a fair rate is in prospect until there is a very decided improvement in general business.

The Steel corporation's report of unfilled obligations at the close of October was quite favorable, considering conditions, there being an increase during October of 57,425 tons, following two months of large losses. Those losses were probably due largely to the corporation canceling old contracts, no longer likely to be specified, and on that basis, and considering that shipments dropped rather sharply, there was probably no increase in actual buying over September, but perhaps even a decrease. In every year after 1923 the corporation showed an October increase, in some cases large, but those increases were due chiefly to annual rail orders and this time there was very little rail buying.

A couple of months ago it looked as if steel ingot production in the second half of the year would total about 17,000,000 tons, against 24,000,000 tons in the first half. Now the best guess is about 15,750,000 tons.

Finished steel prices have continued to show increasing weakness in spots, sheets slipping a little more in the last week. Black sheets now rarely go at above 2.35 cents. Blue annealed 10 gauge was reported a week ago down to 1.90 cents and it is still quotable there, but 13 gauge, then reported as having declined from 2.15 cents to 2.10 cents, may now be quoted at 2.05 cents. The general market on bars, shapes and plates has been called 1.60 cents, with much shading on shapes and plates. Carnegie Steel Co. has now officially announced 1.60 cents as its minimum all around. Such action would not have been taken unless there was strong ground for hoping there would be support by other sellers, and the market in these lines may become stabilized.

PROGRESS ON CONTINENTAL LINE

GREAT BEND, Kans., Nov. 15.—Seven carloads of machinery were received this week for the compressor station 11 miles northwest of Great Bend, which will be used in connection with the 1,000-mile 24-inch gas pipe line from Moore County, Texas, to Chicago. It represented one complete unit of the twin-tandem horizontal gas compressors. The largest pieces in the shipment were two engine frames weighing 22½ tons each. They were hauled to the site 2 miles from a railroad on eight-wheeled log wagons pulled by a caterpillar tractor.

Excavation for the main building, which will house the five 1,250-horsepower compressor units, has been completed. This building will be 68'x140'.

Excavation for the cooling tower, whose function will be to cool the gas to normal before it enters the main 24-inch line, is well under way, and foundations have been run for 5 of the 12 houses for employes. There will be eight four-room cottages, two five-room cottages, a dining hall and a bunk house on the site.

The gas line is being built by the Continental Construction Co.

PIPE LINE COMPLETION TO REDUCE GAS WASTE

LOS ANGELES, Calif., Nov. 15.—With the completion of its $3,500,000 pipe line project over the Ridge route, Southern California Gas Co. has placed itself in readiness to furnish more Kettleman Hills gas to Los Angeles this winter and to aid in the reduction of waste of natural gas from the field.

The project which has just been tested with gas involved laying a 20-inch main across El Tejon pass. Out of the 500,000,000 feet of dry gas a day available at Kettleman, approximately 100,000,000 feet have been going north, some 20,000,000 have been used for field purposes and approximately 30,000,000 sent to Los Angeles County through mains already laid. This left a daily gas waste of approximately 350,000,000 feet.

With winter the amount to go north is expected to increase to 150,000,000 feet a day or more and the amount to Los Angeles is expected to reach 80,000,000 feet, the newly completed facilities making it possible to increase the flow into that section. That would increase the total amount of Kettleman gas constructively used to approximately 280,000,000 feet, reducing the waste to a little more than 200,000,000 feet a day.

Los Angeles County in autumn calls for approximately 145,000,000 feet of dry gas for domestic and industrial use, but winter's peak is around 280,000,000 feet.

PIPE ORDER PLACED FOR LOUISIANA LINE

The A. O. Smith Corp., Milwaukee, has received an order for 150 miles of large diameter gas line pipe from the Texas Construction Co., subsidiary of the Electric Bond & Share Corp., according to J. J. Joys, manager of the pipe division. The orders involve about 25,000 tons of steel, all of which will probably go to western mills.

The pipe is for shipment to points in Louisiana and will be used to connect existing lines in that region. Current production of gas line pipe by the Smith corporation is at the rate of 5 miles daily and unfilled orders assure production at this rate for the balance of the year.

Mr. Joys said that the year 1931 will undoubtedly see further expansion of natural gas systems and that he believed there would also be additional pipe lines built for long distance transportation of refined gasoline next year.

INTERNATIONAL GAS LINE

CHATHAM, Ontario, Nov. 15.—Announcement is made that the pipe line to deliver natural gas from the Rogers-Imperial structure in southern Alberta to the Montana Cities Gas Co. system has been completed to the International boundary, where it will connect with the lines of the Montana company. The Rogers-Imperial No. 1, now owned by the Range Oil & Gas Co. of Calgary, recently showed an open flow of 60,000,000 feet a day. This will be the first time Canadian natural gas has been available for export to the United States since the discontinuance of export from the Ontario fields to Detroit and Buffalo more than 25 years ago.

$2,000,000 EXTENSION

It is estimated the extension of the Roma-Monterrey natural gas line of the Compania Mexicana de Gas S.A., from Monterrey, Mexico, to Saltillo, will cost in the neighborhood of $2,000,000, and will serve Torreon, Laredo, and Gomez Palacio. The Compania Mexicana de Gas is a subsidiary of the United Gas Co.

COLUMBIA GOING AHEAD ON EASTERN PROJECTS

NEW YORK, Nov. 17.—Columbia Gas & Electric Corp. is going forward with construction of its eastern natural gas pipe line network, its statement of operations for the 12 months ended September 30, just issued, discloses.

Contracts have been made to supply natural gas at wholesale to companies serving Washington, D. C., and York, Pa., the company announces, and construction of a 20-inch main pipe line system to Washington from the existing line of the system in southern Pennsylvania is now under way, the line being scheduled for completion early in 1931.

The Washington line, the company states, will be the first unit of a large high pressure main pipe line system planned to be completed next year from the gas fields in West Virginia and Kentucky to the Atlantic seaboard.

"This new line," the company says, "will supply the intervening territory in West Virginia, Virginia and Maryland and, supplemented by the southern Pennsylvania lines, will make available the natural gas resources of the Columbia system to the large industrial and domestic markets along the eastern seaboard."

EL PASO-JUAREZ LINE

The Juarez Gas Co., S. A. in Juarez, Chihuahua, Mexico, and the Texas Cities Gas Co., of El Paso, which furnishes gas to the Juarez company, is renewing the 2-inch high-pressure feed line from El Paso to Juarez across the Rio Grande River. The new 2-inch feed line, which will be welded throughout, will connect with a 4-inch high-pressure line approximately 2,000 feet north of the Rio Grande. This new 2-inch line will replace an old 2-inch screw line, which was laid to serve Juarez in 1909. An additional 6-inch low-pressure line also serves Juarez across the Mexico Central Railway Co.'s bridge.

NEW BURFORD LINE

The Burford Oil Co., which has a 6-inch line from the Hendricks Pool, Winkler County, Texas, to its refinery at Pecos, Tex., is constructing approximately 6½ miles of 4-inch line from the Hendricks Pool to the Leck Pool to the north, where it has contracted with producers to carry some of the oil out of the latter pool. It also has a 4-inch line running from the Hendricks Pool to the Penn Pool, Ector County, from which place it is running oil to its refinery.

REFUSED WYOMING PERMIT

CASPER, Wyo., Nov. 15.—The State Public Service Commission of Wyoming has refused to grant a permit to the Wyoming Montana Pipe Line Co. to lay a pipe line from the Big Horn Basin to refining points in Montana. The line was being promoted by Ray Phoebus and others, operators in the Big Horn Basin, and was intended primarily to carry oil from the Oregon Basin Field to a new refinery at Laurel and the refinery at Billings, in Montana.

VAN-LOUISIANA LINE

FORT WORTH, Tex., Nov. 17.—The Humble Oil & Refining Co. is actively engaged in preparing site for its tank farm, camp and pump station in the northeastern part of the Van Field, and approximately 25 miles of line has been welded and laid on its Van-Louisiana 10-inch line which will transport Van crude to Moore Station near Shreveport, La., to the Standard Oil Co. of Louisiana.

PERSONNEL CHANGES IN MISSOURI-KANSAS

Offices of the Missouri-Kansas Pipe Line Co. are to be moved to Chicago and occupy space in the suite of Frank P. Parish & Co. in the Otis Building at 10 South La Salle.

It was stated at the same time that the offices of the Panhandle & Eastern Co., recently formed by Missouri-Kansas and the Columbus Gas & Electric Co. to push the Texas Panhandle-to-Indiana gas line, will remain in Kansas City. Bert R. Bay, vice president and general manager of the Panhandle & Eastern and of Missouri-Kansas, will have charge of the Kansas City office.

James L. MacManmon, vice-president of Missouri-Kansas Pipe Line Co., has recently resigned from the company. J. S. Shippey, also a vice president of Missouri-Kansas, has resigned to engage in the natural gas business in Vancouver, B. C.

P. D. Preston, formerly an official of P. W. Chapman & Co., is to have charge of the New York offices of Frank P. Parish & Co., the securities organization of the Parish interests, according to plans now made. Mr. Preston has been in charge of the Chicago office of Frank P. Parish & Co.

MO.-KANS. LINE PROGRESS

MEXICO, Mo., Nov. 16.—The Missouri-Kansas Pipe Line Co. is establishing headquarters here for its construction activities while building its natural gas pipe line in Central Missouri. Carloads of 22-inch pipe, used in building the pipe line from Texas and Oklahoma fields across Kansas, Missouri, Illinois and Indiana, arrive each day for distribution by motor trucks east and west from Mexico. The line enters Missouri in Cass County, near Harrisonville, traverses the counties of Johnson, Pettis and Cooper, and crosses the Missouri River near Boonville. From the Missouri River, the line crosses Howard, Boone, Audrain, Ralls and Pike Counties, crossing the Mississippi River into Illinois by way of the Champ Clark bridge at Louisiana.

ALBUQUERQUE LINE

Completion of the Southern Union Gas Co.'s line to Albuquerque from the San Juan Basin gas fields in Northwest New Mexico, is announced. The line to Santa Fe is also complete, and service was begun in the latter city late in October. George L. Fraser is manager at Santa Fe.

Negotiations were reported later in October as being practically closed for the use of the Albuquerque Gas & Electric Co.'s distribution system by Southern Union. The Albuquerque line, with its branch to Santa Fe, represents an expenditure of approximately $5,000,000. It is 175 miles long and is constructed of 12-inch pipe.

CANADA-MONTANA LINE

CHATHAM, Ontario, Nov. 15.—The importation of natural gas from Canada to Montana is soon to be taking place through the new hookup of the Northern Utilities Co. with the line from the Rogers Imperial Field in Canada. This is the first importation of natural gas into the United States. This hookup will also become the northern supply end for the proposed line that will eventually connect with the gas line from Wyoming fields at Billings.

Dr. E. S. Perry of the Montana School of Mines is authority for the statement that at present the natural gas fields of Montana represent a reserve that will easily last the State for 40 years.

ENGINEERS IN ACCORD ON MAJOR PROBLEMS

(Continued from Page 34)

duction division that an additional fund be secured to complete another 10-year program, which in its major details was proposed by the committee in its report of October 10.

It is gratifying to know that the board of fundamental research has adopted this recommendation for it will insure the continuation of this work. The amount appropriated, $100,000, is only 50 per cent of the total amount recommended for the carrying on of research in both production and refinery divisions, but if carefully applied it is felt that it will bring about some very desirable results for the benefit of both divisions.

Other Research Work Recommended

None of this fund will be made available for research in metallurgy or similar sciences that are of particular interest to the manufacturers of oil field equipment, but recommendations have been made by committees who have special problems that cannot be solved until additional data are available that will probably be handled through the research work being carried on by the companies manufacturing the several items of oil field equipment that is involved in these studies.

As an example, there seems to be some need of correlation of certain data as to collapsing and tensile strength of casing and tubular goods used in wells. Each pipe manufacturer makes his own recommendations as to the length of casing strings possible to run under certain conditions but these several recommendations do not in some details meet on common grounds, so the buyer finds himself in the position of deciding upon these matters without full check of all materials offered for his consideration.

It seems only right that the manufacturers should prepare the type of data desired by the buyers for their guidance in purchasing equipment, and when such work has been completed progress will be made toward a standardization of formulas that will make it possible for each manufacturer to write his specifications and guarantees in standard terms and in this way the buyers can make intelligent checks of the equipment offered for their consideration.

Other Committee Activities

It would be difficult to make complete report of all the work that was done by the hundreds of committeemen in sessions at Chicago this year, but everywhere it was stated that real progress had been made and on all major details there was accord.

Some work has been passed back to the committees for further study and later reports and they will be forthcoming at the meetings to be held during the coming year, and summarized in the general reports made at divisional meetings of the production, marketing and refining divisions to be held early in 1931.

In this way it is hoped to do away with many committee meetings at the next annual meeting to be held in Chicago November 10 to 12, 1931, at the Stevens Hotel. By eliminating these committee meetings much more time can be devoted to general sessions.

To build up papers to be presented at the next annual meeting it has been suggested that regional meetings be held at which local members will read papers on subjects of most interest to them and to the engineers and others in those regions and from these district papers will be selected certain ones that will be prepared for presentation at the annual meeting.

It is also proposed that in the production department divisional meetings details of standardization matters be discussed and reports made upon progress in the use of standard equipment and in this way this phase of the institute's activities will be promoted.

Division of Production Meetings

Starting Wednesday morning, November 12, the division of production held four sessions and listened to and discussed several very interesting papers, many of which were printed in the November 6 issue of The Oil and Gas Journal.

Some of the high lights from the discussions will be reported here for each paper as read brought out considerable discussion of the topic under consideration and some of the statements made were of first importance.

In discussing J. R. Gignoux' paper on the selection of oil well casing based on California practice H. G. Texter of Spang, Chalfant & Co. made one very interesting point when he stated:

"I agree with Mr. Gignoux that it looks as though the field is establishing the factors of safety, but I would like to say one thing in defense of the manufacturers. He (the manufacturer) is not merely staying on the low side of his figures for his own protection, but for one very pertinent reason, and that is, a very small amount of out-of-roundness decreases the resistance of collapse enormously.

"Mathematically, the farther you are from circularity of the thoretically round tube the less will be the resistance of this tube to collapse. Only 1 per cent of out-of-roundness will reduce the resistance to collapse of a tube something like 25 per cent. This is one very important reason why the manufacturers seem to be hanging to the low side on their collapse figures.

"There is no getting around that because out-of-roundness is very often, we think, the result of handling of the pipe after it leaves the mills. Whether this is true or not, the fact remains that a small out-of-roundness decreases resistance to collapse enormously; in fact, out of all proportion to other factors."

Production Practice Report

W. W. Scott's report on the improvements in production practice received careful attention and many of the points he brought out were later discussed by engineers present.

In discussing the recently developed, Hobbs, N. M., Field curve (see "Proration Potentials Are Hard to Secure," Page 33, The Oil and Gas Journal, November 6), H. D. Wilde, with the Humble Oil & Refining Co., Houston, Tex., said:

"I am not sure that the question raises the point whether the Hobbs curve could be used at Oklahoma City or whether the same procedure could be used. I do not believe the same curve could be used. It would be necessary to conduct a series of experiments at Oklahoma City to determine the relation of tubing to casing or open flow, and then work up a curve for that field. It would be unwise to take the curve prepared at Hobbs for wells under water drive and try to apply it to other fields where the characteristics influencing production are different.

"One point about the Hobbs curve that should be brought out is that for large wells the curve is quite flat and large changes in potential production give small changes in the actually measured flow through the tubing. For example, one well would show a potential of, say, 6,000 bbls. and a tubing flow of 10,000 bbls., and a second well a potential of 30,000 bbls. and a tubing flow of only 12,000 bbls. Thus an increase of only 2,000 bbls. in measured tubing flow would represent an increase of 12,000 to 15,000 bbls. in the potential production. It would, therefore, seem that the accuracy is not very great in the upper ranges of this curve, and yet it is within that upper range that the greatest interest is shown."

It was stated by E. O. Bennett, Continental Oil Co., Ponca City, Okla., and others that the laws governing the flow of gases will apply to oil if properly interpreted. One engineer stated that the ordinary type of water meter was being used for the measuring of oil flow into storage tanks. The meters are set between oil and gas separator and storage tanks, so that the major portion of the gas accompanying the oil from the well was removed.

It seemed to be the opinion of the engineers present that progress is being made in the study of methods of taking well potentials without the necessity of opening the well for maximum production for even a short period of time and as data are secured such as now being gathered in the Hobbs, N. M., and Yates, Tex., Pools and elsewhere and it is all analyzed and correlated it does seem quite possible that laws will be formulated that will permit gauging a well's full capacity by flow through tubing.

Water Supply Report

The paper on development of water supply and treating methods in a modern oil field presented by W. K. Whiteford for the Mid-Continent section committee was well received and seemed so complete in its scope that there was little to be added.

The Mechanics of Oil Well Pumping by H. E. Dralle of the Westinghouse Electric & Manufacturing Co. was the last paper read at the Wednesday morning session and it created considerable discussion which brought out additional facts regarding oil well pumping.

In the printed paper there were several osillograph diagrams secured by the use of a six-element instrument. Mr. Dralle stated that this instrument records simultaneously the performance of the several functions of the pumping equipment, and in some instances all six elements were needed to make the record while in others fewer elements were used.

There are now available osillographs that will permit the use of nine elements and such instruments can be used to good advantage in making pumping records of gas engine powered wells.

It was pointed out that the osillograph diagram is of much value in a detailed time study of the various functions of a pumping well because the 60-cycle power curve is very broad and can be easily divided into very small time intervals and in this way permit very detailed analysis of the other portions of the diagrams on a time basis.

Arkansas Experiments

A. L. Faber, Arkansas Power & Light Co., Pine Bluff, Ark., gave a very interesting discussion of Mr. Dralle's paper and outlined some work that has been done in the Smackover, Ark., Field to equalize the up-and-down movements of the polished rod. By setting the jackposts on a pumping well back toward the engine house 32 inches and lengthening the pitman to take care of this change of position it was found that a considerable improvement was made and power consumption lowered.

However, Mr. Faber stated that he thought that at least a part of this reduced power requirement was brought about because of the relative change in the position of the rotating counterbalance to the walking beam movement. By moving the counterbalance ahead in its cycle of rotation from 8° to 10° it was found that surging in the pumping action was reduced and actual power consumption cut down materially.

Another point made by Mr. Faber was the use of a doctor's stethoscope to detect the valve movement at the bottom of the well. The stethoscope is placed alongside of the upper end of the tubing, or on the casing if more convenient, and after the listener's sense of hearing has become normalized to the various sounds heard through this instrument, it will be possible for him to detect very clearly the opening and closing of the traveling and standing valve at the bottom of the well.

If a stop watch is also used in connection with this experiment and the movement of the crank is checked it will be found that it is quite possible to time the relative travel of crank with the movements of the valves at the bottom of the well and sufficient evidence gathered to permit of changing the stroke to secure any desired correlation of surface and bottom hole movement.

Unit Operation Session

An exceptionally good paper before the production division group sessions was given by John P. West of the Prairie Oil & Gas Co., Tulsa, on "Land and Lease Aspects of Unit Operation" carried in the November 6 issue of The Oil and Gas Journal.

The next paper by Martin Van Couvering, consulting engineer, Los Angeles, Calif., was read by H. A. Marsh of the Associated Oil Co., Los Angeles, Calif., and was in effect the report of the California district subcommittee on drilling and production practice. It analyzed the practices followed in the development of the Santa Fe Springs, Calif., Field and pointed out how, under unit operation, about $51,700,000 could have been saved in drilling wells to the several sands found in that area.

Under unit operation there would not only have been a direct saving in plant installations but a slowing up of producing rates and by this retarding of production a stabilization of the price structure for that field and the balance of California. It is estimated that instead of one sand being developed and produced in two years as it was under competitive drilling, the time would have been extended over four years with a better recovery and higher rate of income for the operators.

The producing zones might have been repressured as the oil was extracted with a saving in gas that would have been appreciable as well as effected a higher recovery of oil from the sands.

Some of the conclusions reached by Mr. Van Couvering and his committee were challenged by some of the members present for it was stated that no previous knowledge of lower producing horizons was available until after the upper sands had been developed and depleted of their oil. While this statement may to some extent be true, the engineer seemed to think that much would have been gained in the Santa Fe Springs area by an orderly development.

The paper scheduled on the Unit Operation in the Van Pool (Texas) was not presented and T. E. Swigart, chairman of the meeting, next asked for an expression from the engineers on the question of ultimate recovery of oil from a pool under unit operation conditions.

Ultimate Recovery Discussed

At a meeting held Tuesday evening by the central committee on drilling and production practice the question was raised by some engineers on this point and after considerable discussion it was decided to refer it to the afternoon session on unit operation.

After considerable discussion it was developed that the point at issue was not so much one dealing with ultimate recovery as it was concerning methods of operation of unit pools.

J. R. McWilliams, Skelly Oil Co., Tulsa, restated in effect what he had previously set forth in his special article that appeared in the November 6 issue of The Oil and Gas Journal. These are his conclusions as to a workable method of prorating oil and gas in pools that now have potential capacities much greater than the market conditions require.

Carrying this thought further, Mr. McWilliams stated that gas energy as it exists in an oil reservoir is a common property of all owners of surface rights above the oil pool and under existing laws this gas energy can be prorated and its use controlled by commissions now existing in the several oil-producing states.

It, therefore, seemed quite logical to introduce this method of operation into unit operation and several of the engineers present agreed with these conclusions and at the end of a rather detailed debate it was decided that what had apparently been a difference of opinion as to the benefits of unit operation on ultimate recovery of oil was in reality merely a difference of opinion as to how unit operation might be made most effective.

The problem is a large one as witnessed by the statements of others at the annual meeting and was summed up by Judge Ames in his address delivered Wednesday night when he stated that conservation of gas was the one workable method of controlling the production of oil from any pool.

In a very complete review of the situation as set forth at various recent meetings on unit operation held in Tulsa and elsewhere and the results of the court trials in Oklahoma City it seems

that the common grounds upon which the legal and engineering phases of this unit operation problem can find common meeting place will be in considering the conservation of gas energy.

Ever since unit operation has been proposed and as the idea has gained preference there has been an open question of methods of application of its principles to actual field conditions and it now seems that the consensus of opinion of both lawyers and engineers is that gas conservation will best serve their joint needs and permit workable regulations being enforced where it is desirable to operate a pool as a unit.

Evening Session on Unit Operation

At the evening session, November 12, the problems of unit operation were discussed by George Otis Smith, United States Geological Survey, Washington, D. C., and T. E. Swigart of the Shell Oil Co., Los Angeles, Calif., while Judge C. B. Ames of The Texas Company, New York City, summed up the lawyer's view on this very complicated subject.

Mr. Smith made one very essential point in opening his address in that according with the fundamental principles of economics the relation between supply and demand should be expressed in the reverse order, or "Demand and Supply," for this should be the logical sequence of their occurrence.

This point in itself should furnish much food for thought on the part of the industry for if it becomes accustomed to thinking of the demand for its products as is done in the steel industry and rating its requirements to this current demand, the rate of production, or the "supply," will automatically take care of itself.

But if the industry continues to try and regulate its supply to the demand and build up huge reserves aboveground at enormous expense in production and carrying charges it will never again be prosperous until the present visible supplies of crude oil have been dissipated.

Mr. Swigart pointed out many of the technical requirements for unit operations and the benefits that would accrue to all under that method of producing petroleum and to substantiate his arguments cited many statistics as well as outlined several methods of details of operation that were very enlightening.

In closing the unit operation session Judge Ames stressed the point about conservation of gas as mentioned above. His paper was printed in full in the November 6 issue of The Oil and Gas Journal, and deserves careful study by everyone interested in the petroleum industry.

Corrosion Problems

The Thursday morning group session of the division of production covered corrosion of oil field equipment and was presided over by E. P. Bly, chairman of the corrosion committee, and the first paper was read by K. H. Logan of the United States Bureau of Standards, making a report on the work of the Bureau of Standards underground corrosion section during 1930. This report has been published in the November 6 issue of The Oil and Gas Journal.

Dr. Gordon N. Scott, also with the Bureau of Standards, read his report of the work he has been supervising.

"Pipe Protection—Why and How" was the title of the paper presented by W. H. Thornhill, secretary-treasurer of the Underground Pipe Protection Institute, and this paper was published in the November 6 issue of The Oil and Gas Journal.

J. F. Putnam of the Standard Oil Co. of California read a paper on "Soil Corrosion — Causes and Predetermination," was published in the November 6 issue of The Oil and Gas Journal.

The final paper presented at this meeting was a committee report prepared by Dr. Stanley Gill of Houston, Tex.

Discussion of these papers was deferred until they had all been presented. In answering a question about his report Mr. Logan explained in part as follows:

"In general, there is a gradual absorption, a gradual collection of current on most long lines, and that is followed by a more precipitous or sudden discharge of current. Where this discharge of current is rapid, that is, where the amount of current discharged is confined to a comparatively short length of line, it is usually accompanied by corrosion of the line, and it looks as if in certain soils at least the location of those long line currents would permit a way of finding the hot spots in the line. I do not think that this is going to be true of all lines, but it is quite evidently true at least of some lines.

"We find another interesting and instructive point in this connection. The places where the current is discharged from pipe lines are, I believe, invariably places of relatively low electrical resistance, and the line that takes on current in the highly resistant soils tends to discharge it in the low resistance soils. That suggests that in certain regions, which I believe are probably only the alkali soil regions, we might determine or predetermine the corrosivity of soil along a proposed right of way by making measurements of oil resistivity. Where we find a sudden decrease in soil resistivity I think we might anticipate corrosive soil, although we will never, as I say, be able to tell just how corrosive the soil is going to be. It is still a question as to whether the corrosion which we find under those conditions is due strictly to the low resistant soil or to the change in resistance from a high to a low resistance soil.

"We have developed, or I should probably say, Mr. Shepard has developed for this purpose a very simple piece of apparatus for going along and measuring soil resistivity. I also attempted to develop a more or less similar piece of apparatus on the basis of Mr. Putnam's measurements and I think it will be possible to reduce that measurement to the use of one soil rod instead of two."

Discussion by Doctor Scott

In discussing his report Doctor Scott said in part:

"We have under test 46 varieties of coatings on short sections of pipe. These 46 coatings appear in triplicate at each location, making a total of approximately 2,400 specimens under test. These were prepared at Versailles, Ind., under the supervision of the Bureau of Standards, by the manufacturers or the parties responsible for these tests. This occupied a considerable part of the preliminary work just prior to the activities in the field."

Doctor Scott also supplemented his report with a showing of a group of photographs and two reels of motion picture film, illustrating conditions as he found them at points of installation of test specimens and also showing how the specimens had been prepared at Versailles.

Standard Methods Recommended

To elaborate on one or two points from his report Mr. Thornhill, secretary-treasurer for the Underground Pipe Protection Institute, said:

"It has been voted by the U.P.P.I. to take action looking toward the eventual formulation of general recommendations for the examination of bare or coated underground pipe lines not with the intention of establishing criteria for interpreting the results of such inspections, but of stating recommended methods of procedure and standard items of information to be recorded.

"To this end a committee of the U.P.P.I. has been authorized to, and already has, outlined a proposal in a general way to the chairman of the corrosion committee. As a result of the co-operation of these and other interested organizations, it is hoped that such examinations may be facilitated and data accumulated which will permit more justifiable comparisons in this line of work."

In commenting upon the report presented by Mr. Thornhill, E. P. Bly said in part:

"There are three important angles to be considered in this paper. It is worth while because of its calling attention to these three important things.

"First, stress is laid upon the need for more careful application. That cannot be too much stressed. It has been mentioned many times here and should be mentioned many times more, and that emphasis should be taken into the field by responsible executives. That is the hope of the manufacturer's organization and should be of mutual desire.

"Second, emphasis is placed upon economics. You will recall there is a plan on foot to have a paper presented at the next meeting on this important subject.

"Third, I think that to clarify some of the comments that have been going about with reference to the 11 cases of coating service mentioned in the report, it should be in the record that there have been differences of opinion concerning these cases, and it is particularly important that out of these differences of opinion we can get a constructive comment.

"First, however, to give a little color to this thing, I should like to make this comparison. Those of you who are familiar with the principles of optics, and of course you all are, know that it is possible for several individuals to put on different types of spectacles, glasses, those instruments for correcting and standardizing vision, that will each show the situation differently, that is, one type might have a bit different curvature of the lens, another type might have a different coloration of the glass, and so forth. So several different observers will see things differently.

"It is unnecessary to comment here upon who may have had the less dependable type of spectacles on at the time of making these observations, but it is important to stress the fact that we should have standardization on spectacles. That, of course, is the important point brought out by Mr. Thornhill, and is contained in the committee's report. We should have a standard method of making field examinations, so there may be complete confidence ultimately in such reports, and so that they may be used by the Bureau of Standards in extending its soil map work."

There was some comment by members of the institute present at this meeting upon what appears to be a lack of progress in combating pipe line corrosion, but in the opinion of the engineers working on this problem real progress has been and is still being made and this progress is being reduced to workable methods of combating corrosion. It is proposed to include in the committee's work standard examination of some old pipe lines that were laid several years ago without special coatings and make comparison of those lines with others that have been laid more recently with various types of coatings.

Business Session

Thursday afternoon was devoted to the business session of the division of production and William N. Davis, of the Phillips Petroleum Co., Bartlesville, Okla., presided.

Reports from the several committees were presented and accepted. They covered the work done by these committees during the past year and outlined the work to be undertaken for the coming year. All showed definite progress and a well organized program for future activities.

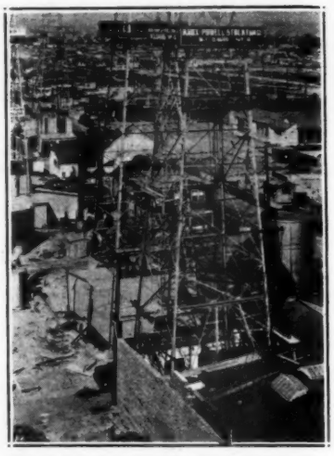
One interesting high light from the report of the committee on standard procedure for measuring, sampling and testing crude oil was brought out by W. R. Trelford, of the Humble Oil & Refining Co., Houston, Tex., who read this report for W. S. Farish, was the fact that Hobbs, N. M., crude oil has a vapor pressure about equal to atmospheric pressure as it is produced. Most of this oil is brought from the well at temperatures somewhat below the normal summer temperatures of that area and as it heats there is a release of some of the light ends of the crude with corresponding losses.

W. R. Fike, chairman of the committee on automotive transportation, stated that he represented one of the new committees of the production division but they were organized in good shape and had an active program outlined for the coming year.

One of their major objectives is to secure uniform laws in the several states covering automotive transportation, and they recommend the adoption of the Hoover code as most nearly fulfilling these general requirements.

DERRICK GROWING FROM ROOF IS VENICE SCENE

Not a trick picture and there's no optical illusion about it. The oil derrick actually is emerging from the roof of the Walker Arms garage in Venice, Calif. The Knox, Powell, Stockton Co., Inc., wanted to put down a well at this spot and the fact that a garage already occupied the site was not allowed to stand in the way of the company's plans.



Forty-two 22-foot piles were driven through an opening in the roof of the garage to afford the concrete foundation a sound binding. To do this the electric wiring and the pile driver itself were handled in such a way as to permit driving the piling without injuring the walls of the garage. About thirty 25-foot railroad rails were driven in to give additional strength. All this was done to carry a Doheny-Stone Hydril rotary table which is to be used on the job. The concrete was poured inside the building.

The erection of the derrick complete by the International Derrick & Equipment Co. was performed without disturbing the business of the garage or of the filling station operated on the corner. The Knox, Powell, Stockton Co., realizing the advertising opportunities which this queerly placed derrick offered, sold space on it from the third bay to the top, and soon after this picture was taken the derrick was to be decked with signs informing passersby that certain companies provided equipment on the installation.

RATE HOBBS POTENTIAL 973,188 BARRELS DAILY

The rated potential production of the Hobbs Pool, in Lea County, New Mexico, in the last half of November is given as 973,188 bbls. per day, with the allowed production 29,857 bbls. per day. There are 122 oil wells in the pool, the average rated production per well being 7,911 bbls. per day, and the average allowed production per well being 245 bbls. per day. Following are the producing companies in the pool and their rated potential and allowed production:

Company—	Wells	Rated potential bbls.*	Actual allowed prodn. bbls.
Amerada	10	127,526	3,557
Atlantic O. P.	2	8,456	326
Continental	6	67,650	1,935
Empire	5	38,264	1,202
Getty	3	44,906	1,220
Gypsy	7	90,174	2,511
Humble	10	119,622	3,514
Landreth	2	10,303	363
Midwest	19	75,664	2,855
Ohio	9	69,984	2,075
Prairie	4	12,179	176
Shell	19	146,415	4,454
Skelly	2	13,478	439
Sun	3	24,366	752
California	5	26,488	778
Texas	6	38,561	1,274
Texas Pacific	2	11,599	397
Tidal	6	48,554	1,434
Walker	2		500
Total	122	973,188	29,857

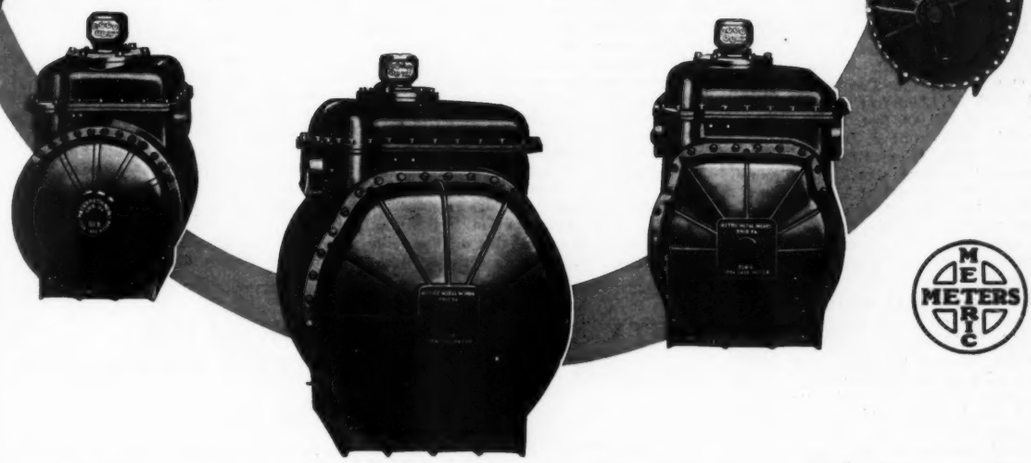
*Daily average.

ACCURACY in a complete cycle

.. is represented by these

IRONCASE

METRIC METERS



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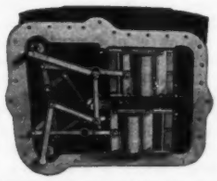

Lighter weight valve covers eliminate friction and its noises, securing, withal, better-than-ever wearing qualities.

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Construction Refinements:—fine, gray iron cases especially protected against interior corrosion; choice of connections (on four smaller sizes); all parts in plain sight permit ready adjustment through handholes; carefully selected, flawless diaphragm leather of finest quality, correct weight and especially tanned for measuring service; superior bronze in bearings and parts subject to wear; Timken bearings and Alemite lubrication (in the large capacity sizes); gas tight, long wearing valves.

Accuracy Assurance:—continuous progress in measurement science—in testing, in proving, in finding better materials, in designing parts that improve operations, in building higher quality meters with greater precision (a program now carried on for forty-two years) is the basis of customer satisfaction, as well as being the assurance of accuracy that accompanies each of these meters into service.

Metric Ironcase Meters make it possible to standardize on the use of a single design for a wide variety of requirements. Gas companies are finding many advantages in this plan. Ironcase facts and any specific data desired will be gladly furnished.

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Central Ohio Maintains Its Activity

Some Fairly Good Oil Producers Found and a Few Gas Wells. Important Test Being Drilled in Allen County, Indiana

By George A. Whitney
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Nov. 17.—Central Ohio maintains its lead in activity in the various divisions of the Central West Field with some fairly good oil producers along with numerous dry holes and a few gas wells.

Little is being accomplished in the old Lima Field of northwestern Ohio. In the Kenton Field of Hardin County, Pleasants Township, the Pleasant Oil & Gas Co.'s No. 2 on the Minnie Burnison farm, Section 6, showed a volume of approximately 500,000 feet at a depth of 1,358 feet. No. 3, same farm, is starting. Hardin County Quarries Co. is drilling on its own property, same section. Bert Sheldon is drilling No. 1 George Schwemmer farm, Section 6, and starting No. 1 on the Leroy G. Doll farm, same section. In Cessna Township, same county, Eagan & White are drilling No. 1 Phoebe L. Gardner farm, Section 12, and in the Geiger Pool.

In Wyandot County, Richland Township, Galliger and others' test on the Mollie Meeks 40 acres, being the SW NW, Section 20, 2 miles west and close to one-half mile south of the town of Wharton, found the Trenton gas at a total depth of 1,390 feet, the well being estimated at 150,000 feet. In Tymochtee Township, same county, Jones & Coyle's test on the John Higgins farm, Section 8, is reported to have struck the Trenton lime at 1,447 feet and at 11 feet in at a depth of 1,458 feet had a long tedious fishing job, the tools being recovered, and then went to a total depth of 1,526 feet or 79 feet into the Trenton, where it was reported a dry hole.

CENTRAL OHIO

There were 20 completions in the Central Ohio Field for the week, of which 10 were dry holes, 5 gas wells and 5 producers with an initial production of 402 bbls., while in new work under way there were 6 new locations staked and 25 wells starting drilling, a total of 31, which is a very good showing for this season of the year, and the average is keeping up in completed work. The work by counties shows that Medina for the week had the greatest number of completions and the best producers of oil.

In Ashland County but one completion was reported and that was the Ohio Fuel Gas Co.'s No. 1-5,296 George M. Harbaugh farm, Section 11, Jackson Township, which is a gas producer. Gold Crown Oil & Gas Co. got a showing of oil at 574-650 feet, from which its No. 4 on the Harry Horn farm, Section 21, Lake Township, will be shot before its completion and value can be given. Clifford & Kolb are drilling No. 7 Ira Meyers farm, Section 29, Perry Township.

In Medina County, the shallow pay sand has brought forth an exceptionally fine oil producer by the Edson Co. in No. 5 on the George W. Packard farm, Section 4, Chatham Township, which produced an initial of 138 bbls. from a depth of 287-319 feet. No. 8, same farm, produced naturally 35 bbls. the first 24 hours from 324-68 feet, while No. 6, same farm, was dry from 346-75 feet, and No. 7 failed to find any shallow sand pay, and is dry. Curtis and others' No. 4 on the Howard Broadsword farm, Section 21, same township, found broken sand and is dry from 354-68 feet. Same parties are drilling No. 3 on the Thomas Brown, Jr., farm, Section 22, same township. In Medina Township, Barnhart and others' test on the George Coleman farm, Section 8, found no shallow sand and goes as a dry hole. Carmen and others met with the same luck in their No. 6 on the F. W Anderson farm, Section 1, Litchfield Township. Myers Brothers reached a depth of 2,830 feet in No. 8 on the G. P. Mong farm, Lot 56, Harrisville Township, and finding no pay sand worth while go after a deeper pay formation.

Lorain County

In Lorain County, Carlisle Township, Wiser Oil Co. struck a dry hole on the James A. Smith farm, Lot 9, from 2,341-44 feet.

In Wayne County, Ohio Fuel Gas Co. is drilling No. 2-5,367 Guy R. Hoenshil farm, Section 13, Chester Township.

In Holmes County, Richland Township, the Ohio Fuel Gas Co. has a gas well in No. 1-5,314 R. E. Hawkins farm, Section 11. East Ohio Gas Co. is drilling No. 1 W. B. Pyers, Section 31, Hardy Township.

In Knox County, Clay Township, I. C. Robinson is drilling on the T. O. McKee farm, Section 11.

In Coshocton County, Tuscarawas Township, Bell Brothers' No. 2 G. and E. Stuckum farm, Lot 9, is reported at 10 bbls. initial from 1,040-83 feet. McClay Brothers are drilling No. 1 Austin L. Rine farm, Section 5, Pike Township.

In Summitt County, the only change from the previous week is that the East Ohio Gas Co. started spudding its No. 2 V. M. Grubb farm, Section 23, Franklin Township.

In Licking County, Fallsburg Township, Bebout and others' No. 1 on the Lucy Vanwinkle farm, Section 13, produced an initial of 112 bbls. from 2,935-79 feet. Hope Construction & Refining Co. is drilling a second test on the John W. Martin farm, same section. Armbruster & Strickler are drilling their No. 6 William Strickler farm, Section 23, Mary Ann Township. I. C. Robinson and others are drilling No. 1 John E. Ruby farm, Section 19, and drilled in a dry hole in No. 1 on the James Claggett farm, Section 10, same township, from 688-95 feet. Ralph Brothers, Inc., struck a light gas producer in No. 2 on the James B. Colville farm, Section 9, from 2,839-59 feet.

In Muskingum County, Washington Township, Ohio Fuel Gas Co. got a gas well in No. 1-5,257 Julia D. Wolf farm, in the third quarter, at 3,963 feet. S. S. Hulse is drilling on the John W. Mohler farm, Sections 16-21, Blue Rock Township. The Pure Oil Co. is drilling No. 5 Lloyd McKee farm, Section 6, Jackson Township. In Brush Creek Township, the Ohio Fuel Gas Co. got a gas well in No. 1-5,301 Lloyd L. Boyd heirs farm, Section 6, from 3,928-74-83 feet.

In Athens County, Ross & Stewart found a dry hole in No. 2 on the Grace A. Day farm, Section 7, Lodi Township, at 920 feet. Frank O'Mara and others are drilling No. 1 on the Nelsonville Lumber Co. land, Section 24, York Township.

Tuscawaras County

In Tuscawaras County, Washington Township, the Gordon Oil Co.'s No. 4 Thomas B. and Rose Shearer farm, lot 34, produced 110 bbls., the pay being found in the Niagara lime from 3,716-27 feet.

In Stark County, Lake Township, F. A. Brendall and others' No. 2 on the Emma S. Donot farm, Section 28, is a dry hole in the Clinton lime from 4,531 41 feet. In Jackson Township, the East Ohio Gas Co. is drilling No. 2 J. M. Blake, Section 36, and No. 1 H. S. Belden Jr., farm, Section 24, same township.

In Fairfield County, Pleasants Township, the City Natural Gas Works is drilling No. 3 Catherine Mertz farm, Section 23. In Richland Township, Patton & Bishop are drilling No. 1 Fred McAfee, Section 32, and Sturm and others are drilling No. 3 Jeff and George Shaw farm, same section.

In Guernsey County, Monroe Township, the East Ohio Gas Co. got a dry hole in a second test on the J. & R. Gadd farm, Section 5, water being found from 3,701-06 feet.

In Pike County, Union Township, Goddard and others are drilling No. 1 Ryland Creel farm, Section 7.

In the Chatham Field, Chatham Township, Medina County, Edson Co.'s No. 28 Daniel Ross farm, Section 13, is reported good for 1 bbl. at 422 feet.

Pure Oil Co.'s No. 3 Albert Holman farm, Section 5, Jackson Township, Muskingum County, is reported with an initial production of 50 bbls. at a depth of 3,008 feet.

INDIANA

One of the important tests under way in Indiana at this time is being drilled by Cyrus Shumaker and others on the Carl Rekeway farm, in Maumee Township, Allen County, near the town of Woodburn, and the Indiana-Ohio state line and northeast of Fort Wayne and west and a little north of the development near Payne, in Paulding County, Ohio Should this well prove a commercial producer it will mean much for the territory immediately between the well now drilling and the former development on the Ohio side of the state line. During the late '90s a test was drilled in the vicinity of Woodburn by Fort Wayne parties and made a fairly good showing and the present test may open something worth while. This test is northeast from the oldtime Trenton Rock Field of northeastern Indiana.

Another test of interest is reported from the Noblesville area of Hamilton County, northeast of Indianapolis, where some work was done in the early days of the old Indiana Trenton Rock development. The test was drilled by L. A. Holeman and others on the Walter Edwards farm, Section 13, Washington Township, and at 10 feet in the Trenton developed a well good for 10 bbls., according to late report. Another test, more or less interesting, is being made in the southern part of Madison County, in the vicinity of Pendleton, by the Pendleton Natural Gas Co., on the Jesse M. Shuman farm, Section 7, Fall Creek Township.

A wildcat test was made by parties on the Levin property, Section 35, Brown Township, Washington County, northwest of New Albany, where the lower Corniferous formation produced a lot of water at 543 feet and is termed a dry hole. A test is being drilled in Rush County in the central eastern part of the state by the Central Fuel Co., on the William Cross farm, Section 8, Jackson Township.

Floyd County

In Floyd County, W. E. Hines and others No. 1 Nate Morton farm, about 2 miles northwest of New Albany, in the southern part of Indiana, which passed through the Trenton lime at a total depth of 2,044 feet, and was dry.

North of the Owensboro, Ky., field in Indiana and in Perry County, T. G. Seitz brought in Nos. 5 and 6 on the Walter of 140 feet. Glenn & Dice's No. 1 Paul Hyde farm, same section and county, was Haefle farm, Section 11, Tobin Township, estimated at 5 bbls. each from a depth

(Continued on Page 146)

FIFTY RIGS ACTUALLY DRILLING IN HORSE CAVE FIELD, KENTUCKY

By George A. Whitney
Staff Correspondent, Kentucky Fields

GLASGOW, Ky., Nov. 17.—Today in the Hart County oil field there are at least 50 rigs actually drilling and three more moved on locations and others are said to be en route to distant localities but near enough to the scene of activity to be quite within the possible oil zone. The Legrande School well showed for a nice producer after some hours of inactivity, and now there are seven 100-bbl. tanks almost full and it puts at least 50 to 60 bbls. in tank every 24 hours. The Abe Garvin well started flowing and it is rated now almost as good as the Louisa Garvin; there are now 3 producing wells on the Louisa Garvin and two offsetting wells, and 11 rigs drilling within 1,500 feet of the original No. 1 Garvin, which is still a big producer and shows little decrease from its first day's output. This is by far the most active spot in Hart County, due largely to the fact that there is a negro school lot and four negro farms ranging from 10 acres to 25 acres, and wedged in alongside, two in a small "strip" very much like a boot, on which a syndicate of farmers and merchants are trying their luck, and if successful, will likely be offset by their neighbors to such an extent their share of the oil will dwindle to miscroscopic proportions.

Late last week Carpenter, Cross and others of Owensboro hit the bull's eye on their No. 1 Coats lease, exactly 4,300 feet northeast of the No. 1 Garvin and now have twenty-one 100-bbl. tanks almost full and other tankage being rushed to the well. This is the most advanced test to the north and caused a scramble for unleased territory in that vicinity but the farmers are also on the alert and advanced their prices in proportion to the size of the new well, and as a result very little actual trading was done. B. F. Wilson, of Bowling Green, Ky., whose activities last spring really revived interest in Hart County, is said to have acreage practically surrounding the big well and for a mile or more in all directions. Within a few hours rigs were being moved in to offset the new strike and this area now bids fair to rival the Garvin district in activity.

In the older portion of the field No. 2 Hatcher, offsetting the discovery well on the McKinnie farm gradually increased its output and continues to fill 2½ to 3 tanks daily, of 100 bbls. capacity; three other wells within a radius of 800 feet of the discovery well have come in, all showing for good producers. Perhaps the second best well in the field is on the Lee Wilson, 1,500 feet due west of the discovery well, which is being held back because of congested condition of the pipe line. The well is owned by B. F. Wilson, who also owns the Trigg Caudell lease where he got a well offsetting No. 1 Mrs. McKinnie; the new well filled two 100-bbl. tanks overnight and did as well during the day time. Wilson has four strings of tools individually and is interested in 17 drilling wells.

Important Strike

Another very important strike is that of the Kentucky Natural Gas Co., a successor of the Wood Oil Co., a subsidiary of the Missouri-Kansas Pipe Line Co.,

(Continued on Page 148)

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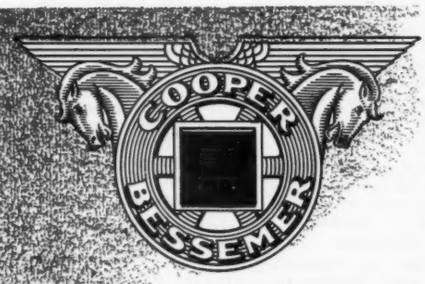

OU'RE ALWAYS SAFE IN CHOOSING A COOPER-BESSEMER

Encouraging Tests in South Alberta

High Grade Crude Encountered in the Rickert Structure, One of Best Yet Outside of Turner Valley District

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Nov. 15.—Two tests in different areas in the southern Alberta foothills have recently shown encouraging indications. On the Rickert structure, west of Turner Valley, Paramount Oils' No. 1, LSD 2, Section 28-19-4w5, which recently resumed work at 2,200-foot depth, the drill entered the Home sands at 2,246 feet and encountered high grade crude in that horizon at 2,253 feet. At last reports the test was standing at 2,286 feet while some repairs were being made. The show appears to have been one of the best yet encountered in the foothills outside the Turner Valley, though it did not represent commercial production. The Rickert structure is a fold west of and parallel to the Turner Valley, and was first mapped some years ago by Julius Rickert of Calgary. The fold extends considerably further north than the Turner Valley structure, and Paramount's No. 1 is located toward the south end. This is the only test on the Rickert structure now active. Indian Oils' No. 1, some distance further north in LSD 7, Section 24-19-6w4, has been shut down for some time at 1,200 feet.

On the Herron structure, north and west of the Turner Valley, Herron Petroleum's No. 1, LSD 3, Section 13-22-6w5, is reported drilling 475 feet in the Madison lime at 3,175 feet with a small gas flow which is increasing as the test is deepened. The drillers are making from 20 to 35 feet of 10-inch hole a day in a very hard lime horizon, and the test is approaching a depth where if the lime corresponds to that in the Turner Valley, commercial production is possible.

Turner Valley Production

Official figures of October deliveries to Regal Oil & Refining Co. of Calgary from the Turner Valley Field show a marked increase over September, deliveries of the latter month being practically tripled. October deliveries aggregated 35,559 bbls. compared with 11,905 bbls. in September, and established a new record for the Regal plant. The marked increase was largely due to new production from East Crest Oil Co.'s Nos. 1 and 2-A which delivered 16,198 bbls., an average of around 523 bbls. a day; and to the coming back into production of Okalta Oils' No. 1, which delivered 5,240 bbls., or around 170 bbls. a day. Wellington Oils' No. 1 increased from 1,199 bbls. to 2,559 bbls., and Homestead Oils' No. 1 from 1,464 to 1,966 bbls. The official report covering deliveries to Imperial Oil, Ltd is not yet available.

Imperial Drilling

In South Turner Valley Imperial Oil, Ltd. is starting a string of new tests offsetting East Crest Oil Co.'s No. 2-A. Of these tests, Southwest Petroleums' No. 2 has started as a diagonal offset to the southwest of the East Crest producer, and is reported drilling at 79 feet. Mayland Oil Co.'s Nos. 5 and 6 will be started shortly on acreage in Section 17-19-2w5, proved up by the East Crest well.

Production from the four Home wells in Section 20-19-2w5 for October aggregated 16,014 bbls. of naphtha and 450 bbls. of light crude compared with 18,292 bbls. of naphtha and 457 bbls. of crude in September. The decline occurred in the middle of the month, and was followed by partial recovery. Home's No. 5 which was shot in the lime at 4,890 feet is cleaning out, and looks like a very small producer.

In South Turner Valley, East Crest Oil Co.'s No. 3, LSD 4, Section 16-19-2w5, is reported rigging up. Boller, Sherman & Boller, who drilled No. 2-A, have the contract. East Crest's No. 2-A, same LSD, is maintaining production and so far has shown no indications of freezing, though carbon in the separators interferes a little with production. This was overcome by pumping hot gasoline into the well for 48 hours. The 7⅞-inch bit was rotated for a similar period, no obstacle being met and the hole being deepened 33 feet in the porous lime. Application of back pressure around 1,200 pounds with occasional cleaning of the separators has apparently secured steady production and eliminated freezing, which has intermittently affected all the other large wells in the field.

Miracle Oils' No. 2, LSD 16, Section 5-19-2w5, west of Miracle's No. 1, has spudded in.

In Section 20-19-2w5, Calmont Oils' No. 2 is endeavoring to secure increased production by adjustments between the well and the separators. The well blew in with over 42,000,000 feet of wet gas, the largest flow in the field, but owing to freezing troubles has been compelled to operate with back pressure that reduces the flow to one-eighth of normal.

In the extreme south end, William Livingston of Calgary has subleased 20 acres in N half, LSD 5, Section 34-18-2w5, from Anaconda Oil Co. on a royalty basis. Livingston's No. 1 has been located on this acreage close to Merland Oil Co.'s No. 1, and drilling contract has been let to Union Drilling Co. of Calgary. The location is on the line of structure between Sterling Pacific Oil Co.'s No. 1, to the north, which is a fair producer from the deep lime, and Merland Oil Co.'s No. 1 to the south, which got a strong wet gas flow in the Dalhousie sand but has not yet been drilled to the deep horizon. Anaconda Oil Co. retains 40 acres diagonally offsetting this lease, and 120 acres close to the Livingston tract.

The pipe line in South Turner Valley which previously ran as far as the Home lease has been extended south to Section 4-19-2w5, to take production of the Mercury and Miracle wells.

Central Turner Valley

In the Central Turner Valley area, Sioux City Oil Co.'s No. 1, LSD 10, Section 1-20-3w5, has definitely broken all records for depth in the Madison lime, having reached a depth of 6,143 feet and 1,758 feet in the lime. At this depth the company announced its decision to continue for at least another week. The test has a little wet gas at several horizons.

McLeod Oil Co.'s No. 5, LSD 15, is at 4,955 feet and waiting for cement to set. Difficulty was experienced in cementing owing to light crude in the hole.

In Section 12-20-3w5, British Dominion Oil Development Corp.'s No. 3, LSD 6, is reported drilling close to the McDougall-Segur sands at 3,677 feet. Production may be taken for a time from this horizon. British Dominion's No. 2 produced 2,520 bbls. from the deep lime in October, and production to the end of October aggregates 28,054 bbls., mostly naphtha, valued at $102,509.15.

In Section 13-20-3w5, Spooner Oils' No. 4, LSD 14, is drilling in the top of the lime at 5,080 feet. Spooner's Nos. 1 and 2 delivered 3,811 bbls. for October.

Hudson's Bay Operations

In the northern foothills area, Hudson's Bay Oil & Gas Co.'s No. 1 Paintearth, LSD 5, Section 27-39-15w4, is drilling around 2,000 feet after straightening crooked hole. In the Keko Lake district, southern Alberta, Hudson's Bay's No. 1 Keko, LSD 2, Section 17-11-22w4, is drilling out cement at 2,080 feet. The company to insure a satisfactory water supply has applied for permission to divert water from the Oldman River at a point about 6 miles west of MacLeod. The company is unofficially reported still drilling on its No. 1 Highwood, LSD 8, Section 1-18-3w5, the only test still active on the Highwood structure; and on No. 1 Eyremore, LSD 2, Section 26-17-18w4, in the Lomond district. No figures are being given out as to depths reached. The company is also unofficially reported to be building roads preparatory to starting a new test in the Brazeau area some 160 miles northwest of Calgary, where it holds acreage north of the Brazeau River. Governor Charles V. Sale of London, England, head of the Hudson's Bay company, with George W. Allan, chairman of the Canadian committee, and P. A. Chester, Canadian general manager, visited Edmonton recently when they conferred with R. Van A. Mills, vice president and general manager of the Hudson's Bay Oil & Gas Co. in regard to the development work in progress and in contemplation.

In the Red Coulee Field, Vanalta Oils' No. 4 is preparing to start work in Section 4-1-16w4.

Southwest of Lethbridge, Texas-Imperial's No. 1, LSD 14, Section 22-8-22w4, is reported rigged up ready to spud in.

On the Rogers-Imperial structure east of Coutts, Range Oil & Gas Co. will start a comprehensive drilling program in the spring to increase its production of dry gas for export to Montana.

Wainwright Field

In the Wainwright Field, Blair & Stevens of Edmonton are rigging up rotary equipment to drill in Bethwain Oils' No. 2, LSD 9, Section 4-45-6w4. This hole has for some months been standing cemented on top of the oil sand at around 2,281 feet, at which depth a good oil-bearing sand was cored.

Arm Lake Oil & Gas Co. has been organized by Edmonton and Wainwright interests with J. L. Daugherty as managing director. The company plans to start a deep test in the early spring and to drill to at least 4,000 feet. The normal producing horizon in the field is around 2,200 feet though Imperial Oils' Fabyan well was carried to 2,830 feet and entered the lime. Several Wainwright tests in recent years have drilled below the producing sands into the top of the lime, but none has yet been carried to conclusive depths. It is understood a test may be drilled near Arm Lake, in Section 36-43-5w4, due south of Heath and 10 miles west of the London-Ribstone wells. Acreage in this area was geologized several years ago by J. O. Williams of Calgary, at which time some leasing was done but no drilling was undertaken.

A small cracking plant was recently erected at Wainwright under supervision of W. H. Stillson who, in conjunction with the Anderson interests of Los Angeles, has a new process for treating heavy crudes. Experimental work has been carried on with the heavy crudes of the Wainwright Field, and it is stated that the first unit of a commercial plant to operate under the Stillson patents will be erected this winter.

Manitoba Structure Test

In southern Manitoba, near Manitou, Commonwealth Petroleums, Ltd., of Calgary, is drilling the first of a series of structure tests, preparatory to locating a commercial test in the spring.

Ontario Drilling

In southwestern Ontario, considerable drilling for gas is being done in the D'Clute Field in Kent County. In this area, American Engineering Co.'s No. 3, John Dawson farm, Lot 147, South Talbot Road, Raleigh Township, got a flow of 500,000 feet a day at 1,589 feet. A shot increased this to around 1,000,000 feet. Location was south and west of No. 2, which got a considerably larger shot production, and a short distance east of a dry hole. In the same field, Union Natural Gas Co.'s No. 16, SE, Lot 146, North Talbot Road, finished at 1,570 feet. A small gas flow, about 200,000 feet, was encountered at a higher point, and a shot with 375 pounds of dynamite increased this to 386,000 feet. Union's No. 17, Sykes farm, S half Lot 16, Concession 15, Raleigh, finished at 1,441 feet got a hard, nonporous formation and was finished at this depth, a production of 500,000 feet being secured from an upper horizon without a shot. Union's No. 18, N quarter Lot 144, Talbot Road, is reported drilling around 1,390 feet.

In the Romney end of the old Tilbury Field, Southern Ontario Gas Co. finished a small gasser on the northwest quarter of the E. Baldwin farm, Lot 185, South Talbot Road, about 600 feet back from the road. The well developed slightly over 150,000 feet after shot. Southern Ontario Gas Co. is drilling on a new test on the southwest quarter, George H. Dawson farm, Lot 187, South Talbot Road. The company has constructed a pier extending about 350 feet into Lake Erie from the southeast corner of the George H. Dawson farm, and is reported planning to drill a test in the lake. This location is some distance west of the series of wells drilled by the Southern Ontario company in Lake Erie about 15 years ago.

In Dawn Township, Lambton County, Union Natural Gas Co.'s No. 50, Gray farm, Lot 23, Concession 10, finished a dry hole at 2,201 feet, being carried considerably below the usual depth. Union's No. 51, Childs farm, SE, Lot 20, Concession 1, Dawn is drilling at 1,950 feet after getting a slight show at 1,660 feet. Union's No. 52, Barnes farm, W half, Lot 23, Concession 11 Dawn, is starting.

In Mosa Township, Middlesex County, Southern Ontario Gas Co.'s No. 4, W half, Lot 16, Concession 3, finished a dry hole. No. 5 is drilling.

Brantford Reserve Drilling

Announcement is made that a further extensive drilling program has been arranged for the Petrol Oil & Gas Co. of Toronto on its acreage on the Six Nations Indian Reserve near Brantford. Contracts are being signed for the drilling of 25 additional wells on this acreage, and for an additional 10 wells, making a total of 35 tests. The company has already completed 30 shallow wells, and two additional wells are near completion in the Reserve area. A 2-inch pipe line constructed to handle production has been recently replaced by a 4-inch line. The line connects with the Dominion Natural Gas Co.'s pipe line system near Brantford. The Petrol company receives 30 cents per 1,000 feet from the Dominion, which handles transmission and distribution. Production is encountered at between 500 and 600 feet, and wells can be drilled for about $1,600 each; the individual wells are small gassers, averaging around 75,000 feet a day, the aggregate open flow being estimated at about 2,000,000 feet.

Atlantic-Keystone Operations

Announcement has been made that Atlantic-Keystone Petroleum, Ltd., will start drilling next spring on extensive acreage in Alberta. This company, originally incorporated under Delaware char-

(Continued on Page 94)

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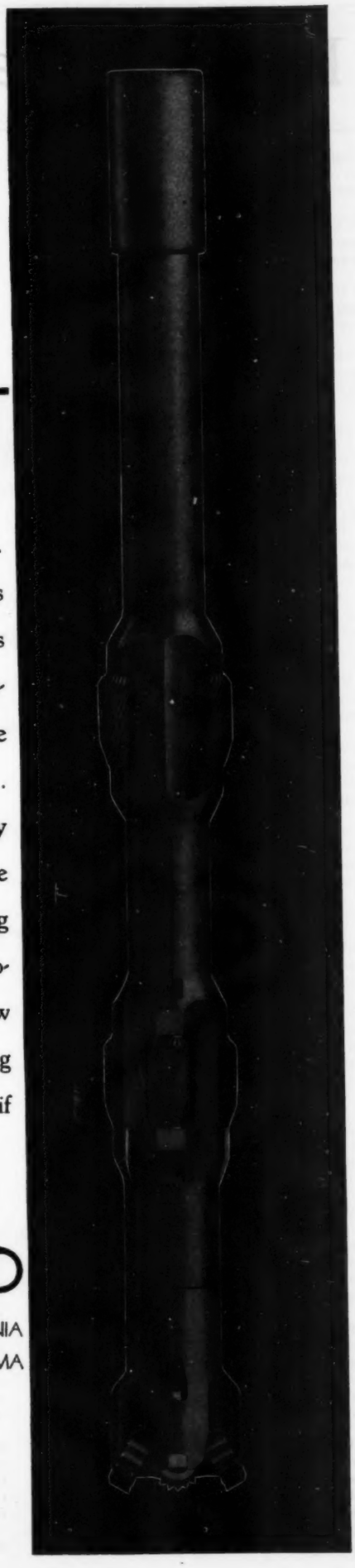

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Personal Paragraphs About Oil Men

Frederick G. Clapp, petroleum engineer, New York City, was a recent visitor in Houston, Tex., on business.

* * *

T. T. Word, of the T. T. Word Supply Company, Houston, Tex., has returned from a short trip to Mineral Wells, Tex.

* * *

T. C. Skeen, executive of the Columbia Steel Tank Company, Kansas City, Missouri, has been covering Texas on a business trip.

* * *

T. K. Smith, president of the Chestnut & Smith Corporation, Tulsa, has been visiting district offices of his company in Texas.

* * *

John Brokaw, geologist for the Pure Oil Company, has been transferred back to San Angelo from the Van Field, East Texas. He was formerly stationed at San Angelo.

* * *

Van H. Manning has resigned as vice president and director of research and engineering for the Petroleum Research Corporation, and will engage in consulting practice.

* * *

W. A. Hammann, scout for the Louisiana Oil Refining Corporation at Shreveport, La., has been transferred to the Mississippi district with headquarters at Jackson.

* * *

T. M. Milling, head of the Standard Oil Company's legal department at Shreveport, has returned from a month's vacation in Florida.

* * *

Jeffrey Bartlett, who has been in the organic department at Columbia University, has joined the research laboratories of the Standard Oil Development Company, Elizabeth, N. J.

* * *

Norman D. Day, vice president of the Pennzoil Company, has announced the appointment of Willard G. Gregory, advertising manager, to manager of sales promotion, a newly created department.

* * *

A. G. Reed, an executive of the Cosden Oil Company, Fort Worth, Texas, who was rather seriously injured in an automobile accident several weeks ago, is recovering satisfactorily, but is still laid up in the hospital.

* * *

A. Ernest MacGee, formerly general manager of the Viking Gasoline Corporation, Charleston, W. Va., is now connected with the Skelly Oil Company, El Dorado, Kans., in the capacity of manager of the special solvents department.

* * *

Col. T. H. Barton, president, and Sylvester Dayson, vice president, Lion Oil Refining Company of El Dorado, Ark., and M. J. Grogan, president Louisiana Oil Refining Corporation, of Shreveport, La., spent the week in Chicago.

* * *

W. F. Seeger has been transferred from Breckenridge, Texas, to Sayre, Okla., where the Texas Carbon Industries, Inc., with which he is associated, has under construction a $75,000 plant for the manufacture of carbon black and absorption of natural gasoline from gas.

* * *

W. S. Guilford, formerly chief chemist for the Louisiana Oil Refining Corporation at Shreveport, La., has accepted appointment as an instructor in chemistry at Loyola University, New Orleans, La. He is succeeded by J. F. Whitley, Jr., a graduate of Louisiana State University, at Baton Rouge.

* * *

Dr. M. G. Edwards, geologist for the Shell Oil Company of California, and Louis N. Waterfall, geologist for the Union Oil Company of California, were elected president and secretary-treasurer respectively of the Pacific section of the American Association of Petroleum Geologists at the seventh annual meeting in Los Angeles.

R. J. Hanna, vice president of the Standard Oil Company of California, has arrived in Los Angeles from New York, traveling by boat via Havana and Panama.

* * *

Henry Mason Day has been admitted to partnership in the New York Stock Exchange firm of Redmond & Co. Mr. Day was a former vice president of one of the Sinclair companies.

* * *

Louis Lyons, director of safety work for the Louisiana Oil Refining Corporation at Shreveport, has been made safety examiner for the Southern Bell Telephone & Telegraph Company, which has just begun the work on a large scale in the Shreveport division.

* * *

R. H. Morrison, manager of the southern division of The California Company, Dallas, Tex., is in San Francisco, attending to business at the Standard Oil Company of California's main offices. Mr. Morrison lately succeeded Warner Clark at Dallas as manager of the southern division, when Mr. Clark was given a promotion and transferred to the company's main offices at San Francisco.

Men of the Industry

Carl E. Gerteis

Carl E. Gerteis, recently made regional manager for the Shell Petroleum Corporation in Ohio and the western part of West Virginia, entered the service of that company in July, 1926, and during the three years immediately preceding this promotion had direct charge of the development section of the company's distribution department. The function of the distribution department is the acquisition and erection of new distribution facilities, including negotiations for the purchase of operating companies. During Mr. Gerteis' supervision the company extended its activities into 19 states where previously it had covered 7. In his new position Mr. Gerteis has charge of all sales activities in the Ohio region, with district sales offices in Cleveland, Cincinnati and Columbus. His headquarters are in Cleveland.

Mr. Gerteis, a native of Wichita, Kans., worked for the Rock Island and Frisco railroads after leaving school and entered the oil business in 1917 with the White Star Refining Company in Detroit, Mich., remaining with that company in various capacities until he joined the Shell organization.

Mr. Gerteis is married and three of his four children are students in Illinois State University.

E. B. Corbett, president of the Harrisburg Pipe & Pipe Bending Company, Houston, Tex., has been on a business trip over the Corsicana territory.

* * *

F. J. Sargent, treasurer of the Illinois Pipe Line Company, Findlay, Ohio, has been spending some time in the company's office at Fort Worth, Tex.

* * *

Herman Bretschneider, in the land department of the Atlantic Oil Producing Company, San Angelo, Texas, is laid up in the Baylor Hospital at Dallas.

* * *

Charles H. Lane, president of the Hydraulic Equipment Company, Houston, Tex., has returned from a business trip through Oklahoma and North Texas fields.

* * *

Adrian Moore, vice president and general manager of the Rycade Oil Corporation, Houston, Tex., has been spending several days on a hunting trip in South Texas.

* * *

A. D. Blackard, vice president, and V. N. Roadstrum of the Chestnut & Smith Corporation, have been spending a few days in Texas where the company has large holdings, gasoline plants and producing wells.

* * *

Carl G. Cromwell, independent operator and aviation enthusiast of San Angelo, Texas, is not content with merely flying in his ships, but is taking instructions from one of his pilots and hopes to solo in a short time.

* * *

R. Otis McClintock, president of the First National Bank, Tulsa, and John H. Markham, Jr., independent oil producer, of Tulsa, have been elected directors of the Southland Royalty Company of Ponca City, Okla.

* * *

Charles Hall, genial field scout of the General Petroleum Corporation with offices in Los Angeles, has been confined in the Hollywood Hospital with an intestinal disorder but is expected to be up and around again shortly.

* * *

Louis A. Mikeska has recently left the Rockefeller Institute to join the research laboratories of the Standard Oil Development Company, Elizabeth, N. J., where he is conducting work on the chemistry of the heavier hydrocarbons.

* * *

Arthur J. Devlin, who as vice president and general manager of the Grayburg Oil Company, San Antonio, Tex., has directed the operations of that company since April of this year, has resigned and returned to his former home in Tulsa. He will devote his time to his own interests in Tulsa and will also open an office in New York.

* * *

Roy M. Johnson, independent oil operator from Ardmore, Okla., has been appointed by the governor of Oklahoma general chairman of the committee in charge of celebration, marking the formal opening of U. S. Highway No. 77, at Ardmore, December 12, which is the first hard surfaced road across Oklahoma from the north to the south.

* * *

A. T. Coumbe, Jr., assistant economic analyst in the United States Bureau of Mines, who has been doing petroleum economic survey work at the petroleum experimental station in Bartlesville, Okla., for the past three years under E. B. Swanson, chief of the economic division of the bureau, has been recalled to Washington, D. C., where he was stationed before going to Bartlesville.

* * *

Miss Mozelle Bryan, Pecos, Texas, and John T. Thomas were married at that place November 8. Mr. Thomas is vice president and general manager of the Burford Oil Company at Pecos, post commander of the American Legion and a director of the chamber of commerce. Mrs. Thomas is a graduate of the University of Colorado and Mr. Thomas a graduate of the University of Oklahoma, doing graduate work at Columbia.

charging stock More than 250 Dubbs units are proving that every day in many parts of the world

Every Dubbs plant is built to fit the conditions in its field—raw material supply, transportation and markets The Dubbs process is so flexible that it can be easily changed as conditions change

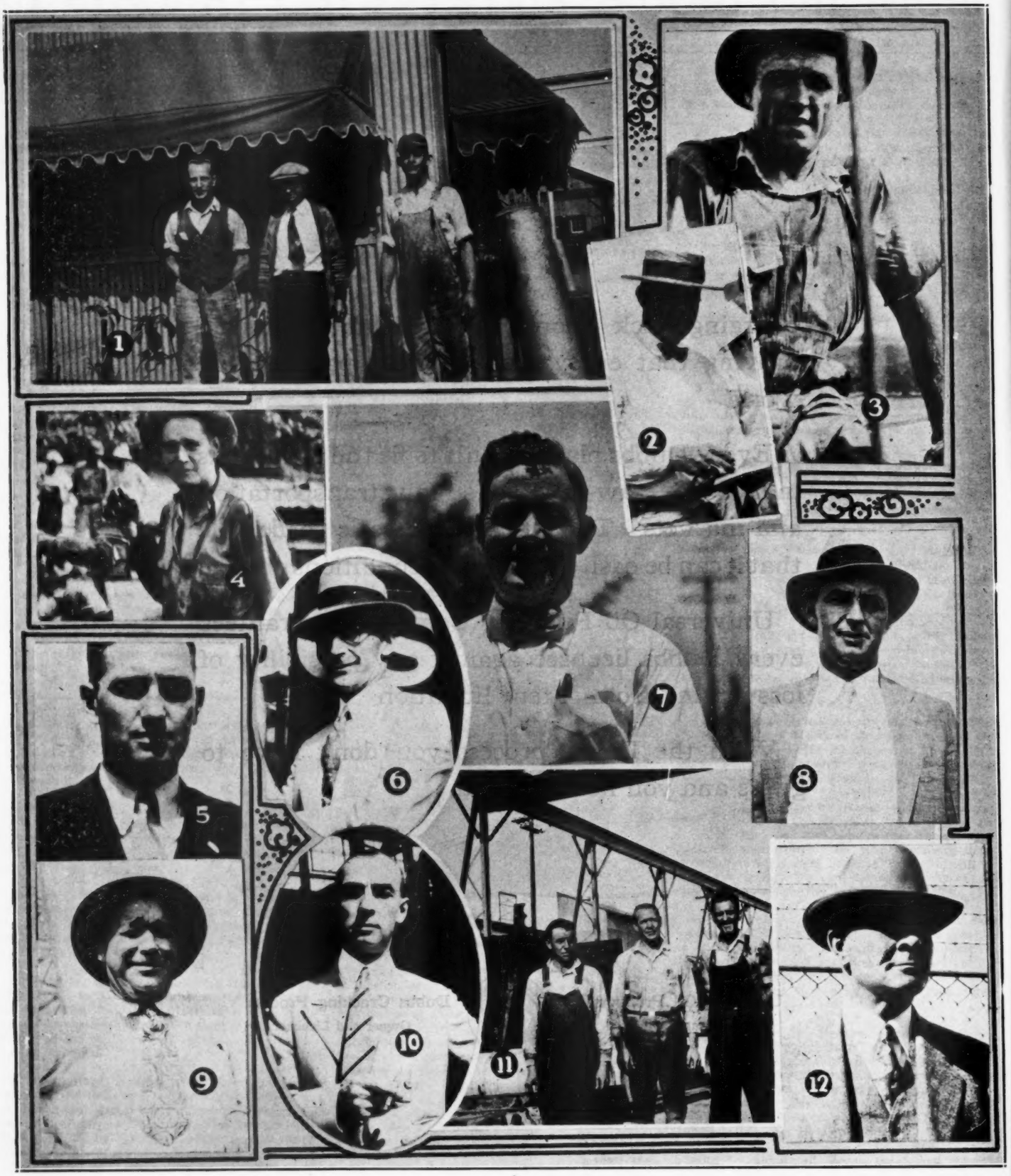
Universal Oil Products Company guarantees every Dubbs licensee against any possibility of loss arising from patent litigation

With the Dubbs process you don't have to guess and you need not fear

Universal Oil Products Co
Chicago, Illinois

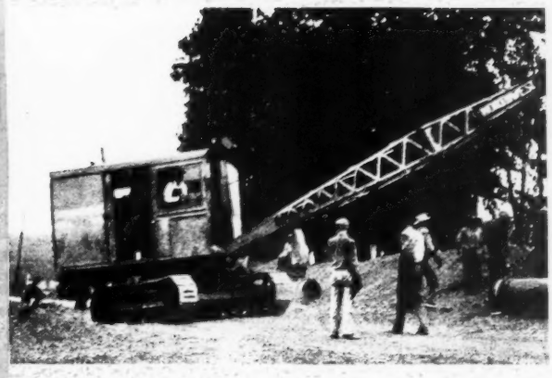
Dubbs Cracking Process
Owner and Licensor

Busy Oil Men Caught By The Journal's Cameras



1—E. G. Straight, H. D. McDonald, and C. G. Thayer, Vernon Machine Shop Warehouse, General Petroleum Corp. of California. 2—C. H. McDuff, general superintendent of production, Pure Oil Co., Fort Worth, Tex. 3—Jack Brannon, rig builder, Van Field, Van Zandt County, Texas. 4—M. Messenger, Halliburton Oil Well Cementing Co., Van, Tex. 5—Eric G. Schroeder, president, Kibele Manufacturing Co., San Antonio, Tex. 6—J. A. Lawton, Franklin Valveless Engine Co. 7—R. R. (Rol) Crum, president and general manager, Crum-Brainard Co., Ltd. 8—L. L. Rector, general manager, Longhart Supply Co. 9—C. U. Beasley, drilling contractor, Van, Tex. 10—W. G. Swaney, general manager, Kerotest Manufacturing Co., Pittsburgh, Pa. 11—V. G. Barrell, helper; W. L. Torrence, foreman; and Ed. Wallace, Vernon Steel Yard, General Petroleum Corp. of California. 12—T. W. Sutherland, general production superintendent, Lone Star Gas Co., Dallas, Tex.

not 1 speed
not 2 speeds
But—
ANY SPEED
at a touch of a lever



Traveling at four miles an hour to pick up another pipe section. This machine is on the Missouri Valley pipe line and has traveled over 200 miles without an instant's delay

JUST a touch of a lever and you overcome the delays of governed speed just as you speed up your automobile—travel, hoist and swing can be performed slowly or at the full speed of the motor at the operator's discretion. This is made possible by the Northwest Variable Speed Motor, accelerator controlled, an exclusive Northwest feature.

It means travel speeds up to 4 miles an hour—a new feature for profit on pipe line work.

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The world's largest exclusive builders of gasoline, oil burning and electric powered shovels, cranes and draglines

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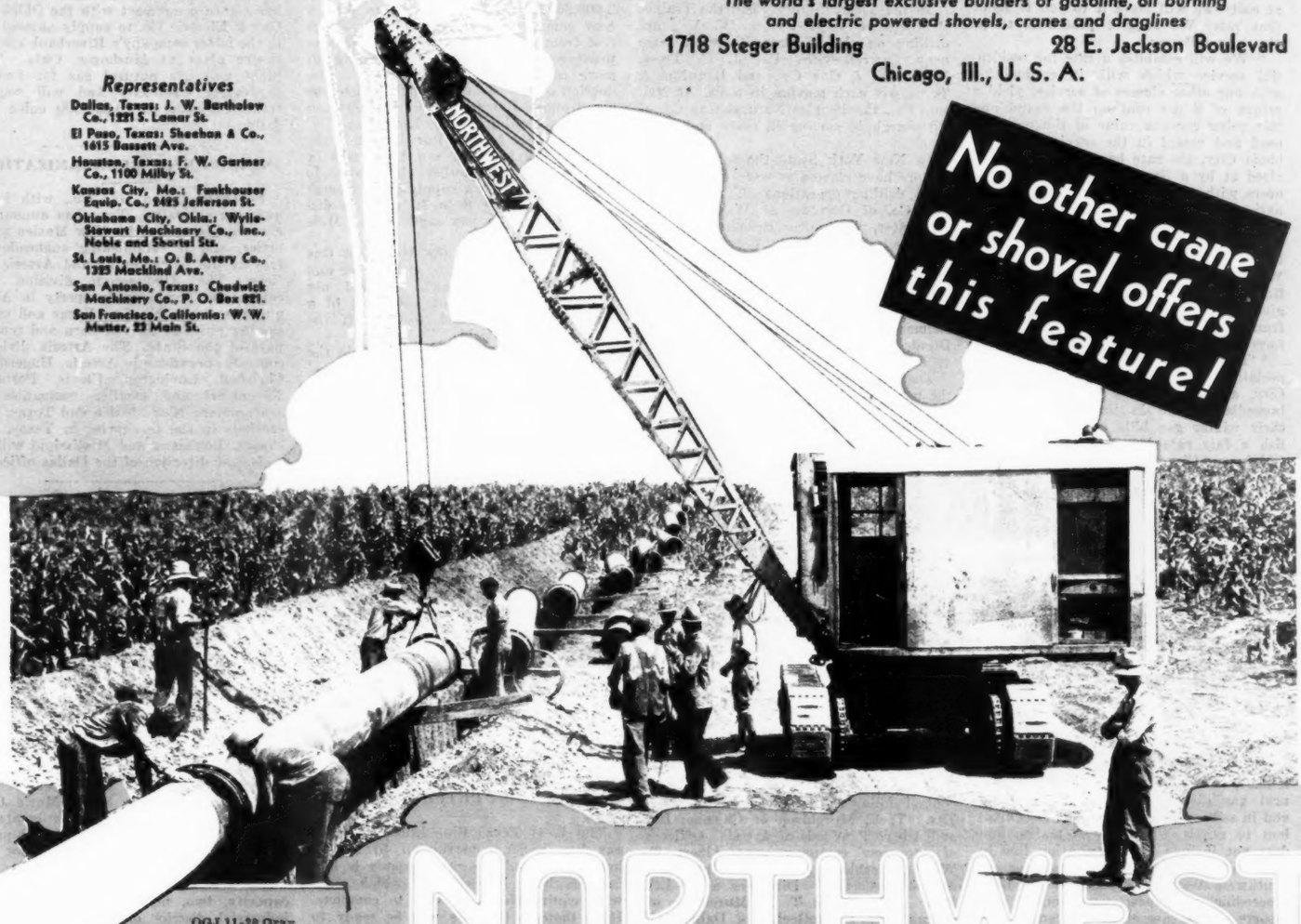
Oklahoma City, Okla.: Wylie-Stewart Machinery Co., Inc., Noble and Shartel Sts.

St. Louis, Mo.: O. B. Avery Co., 1325 Macklind Ave.

San Antonio, Texas: Chadwick Machinery Co., P. O. Box 821.

San Francisco, California: W. W. Mutter, 23 Main St.

No other crane or shovel offers this feature!



OGJ 11-20 Gray

NORTHWEST

Natural Gas Industry Developments

OKLAHOMA NATURAL OKLAHOMA CITY BID

The Oklahoma Natural Gas Corp. is still hopeful of reaching a rate agreement with Oklahoma City, W. P. Canavan, vice president, in charge of Oklahoma City operations, says.

Meanwhile the city is awaiting word from J. G. Pundt, Texas utility operator, that his offer to supply gas at 39 cents in competition to the Oklahoma Natural's 57-cent rate, has been approved by his financial backers.

The city council and members of the citizens' gas committee have voted to accept Pundt's proposition, which is that he build a plant at a cost of from $3,000,000 to $5,000,000 to be turned over to the city in exchange for a 25-year franchise at the 39-cent rate.

A letter signed by Mr. Canavan has been mailed to the patrons of the Oklahoma Natural Gas Corp. in Oklahoma City, giving the main features of the company's proposition for renewal of its franchise, filed with the city council.

The letter follows:

"The Oklahoma Natural Gas Corp. has submitted to the city council of Oklahoma City a proposition for a permanent reduction in gas rates in connection with the renewal of its franchise. The following extracts from the proposal and comments are submitted:

" 'We offer a rate on basis of service at cost—we will leave it to you to name that rate. We suggest procedure to be about as follows:

" 'We will establish a rate for residential service which will, in conjunction with our other classes of service, yield a return of 8 per cent on the sound and fair going concern value of the property used and useful in the service of Oklahoma City, the rate base value to be arrived at by a firm of disinterested engineers with an established reputation and nationally known as experts on public utility appraisal and rate work. The engineers to be jointly selected by Mayor Dean and the company's vice president, W. P. Canavan of Oklahoma City. The findings and recommendations of the engineers to be final. The form of new franchise to be same as the one now in force.

" 'This plan would give the people, especially the small consumer of Oklahoma City, a very low rate beginning almost immediately and in time to cut down their winter gas bills and would establish a fair rate base which would give Oklahoma City bed rock rates at all times.'

"In addition to the rate reduction proposal the Oklahoma Natural will expend approximately $250,000 in improvements and extensions thus furnishing a great deal of additional work for Oklahoma City labor.

"The proposition submitted to the people of Oklahoma City is entirely new in character and detail from any proposal heretofore made and in actual operation will assure a great reduction in rates to all users—especially small domestic consumers."

HOUSTON NATURAL GAS

The Houston Natural Gas Co. reports it has placed nearly 2,000,000 feet of natural gas distribution lines in Houston and in suburban territory. This is equivalent to nearly 400 miles of mains, and does not include the distributing line in some 40 other small communities in Southwest Texas. The company has been proceeding with new construction, and reports an increase of 20 per cent in the number of meters installed in the first nine months of this year.

P. G. & E. PROGRAM

SAN FRANCISCO, Calif., Nov. 15.—A. F. Hockenbeamer, president of Pacific Gas & Electric Co., estimates that total construction expenditures for 1930 will approximate $40,000,000, in addition to the cost of regular operations and exclusive of amounts expended on properties acquired during the year from the North American Co.

In the first nine months of 1930, Pacific Gas' building activities have averaged $3,500,000 monthly. This compares with a construction budget of $35,000,000 for this year or an average of approximately $3,000,000 a month, expenditure of which was pledged by the company last November as part of President Hoover's program.

DRILLING FOR GAS IN MOST EASTERLY FIELD

CORNING, N. Y., Nov. 15.—Corning and Elmira are dividing honors as the center of operations in southern New York and northern Pennsylvania since the development of the gas field in the Watkins, N. Y., area and the more recent opening of a gas field in Tioga County, Pennsylvania.

The Belmont Triangle Drilling Co. of Bradford, Pa., has drilled 10 gas wells in the Altay Field, near Watkins. These wells were good for from 3,000,000 to 10,000,000 feet in initial production.

In the Tioga County Field the Trainer Brothers of West Union, W. Va., are drilling on the William Bostwick farm near Lawrenceville, Pa. J. C. Trees, Miller Oil & Gas Co., and Benedum & Trees, are each moving in tools. At Nelson, Pa., the Peoples Natural Gas Co. of Pittsburgh is moving in three strings of tools.

In New York State the following operators have started or were preparing to start drilling operations: Tyrone Oil & Gas Co. of Corning, at Wayne; J. F. Carpenter, at Dundee; Benedum & Trees, two wells at Howard; Colonial Gas & Electric Co., at Kings Ferry and another test at South Lansing; Shannon Brothers, at Constantia; Benedum & Trees, at Alpine, and another test at Addison; and Belmont Quadrangle Drilling Co., two at Dundee, one at South Pultney, and one at Rushville.

The gas fields in this general area are the most easterly oil or gas developments in the United States. The Tioga Field is about 50 miles east of the Bradford Field in Pennsylvania and the Watkins area is about 50 miles northeast of the Allegany Field in New York.

CONSUMERS GAS MERGER

The Consumers Gas Co. is a recently formed organization, the result of the merger of five gas companies of New Mexico and Oklahoma. The new company purchased outright the stock of the Pecos Valley Gas Co. of Artesia, N. Mex., the Gas Co. of New Mexico, Clovis, the Lovington Gas Co., Lovington, N. Mex., the Pioneer Gas Utility Co. of Oklahoma City, Okla., and the Oklahoma General Gas Co. It is reported that none of the five companies will lose its identity, but will operate through the Consumers Gas Co., with general headquarters at Artesia, N. Mex.

Names of the members of the board of control follow: Lee Moor of El Paso, Tex.; T. F. Murchison of Chicago, Ill., and Albert T. Woods of Artesia. Officers of the new company are: Albert T. Woods, president, and Morris Brown of Artesia, secretary. Directors are: Lee Moor of El Paso; T. F. Murchison of Chicago; K. F. McGeehee of Dallas; C. W. Murchison of Chicago, and A. T. Woods of Artesia.

MUSKEGON PREPARING FOR CHANGE IN GAS

MUSKEGON, Mich., Nov. 17.—Immediate steps to make the change back from natural to artificial gas are being taken by D. A. Powell, president and general manager of the Muskegon Gas Co. as the result of the failure to develop commercial gas production in the first deep test in the proved Muskegon oil field. The test gave indications of becoming a large dry gasser in the Monroe formation at 2,255-65 feet but made only 200,000 feet at 2,270 feet when drilled in.

Manufacture of artificial gas in a completely rehabilitated plant has been started, the manufactured gas being mixed with natural gas to meet demands of the domestic consumers of Greater Muskegon. The company will continue to mix artificial and natural gas for about 30 days during the change back. Average daily production of the field has dropped to about 2,000,000 feet, according to J. L. Robinson, field superintendent of the West Michigan Consumers Co.

No gas has been used for boiler purposes since October 15. At 2,000,000 feet a day the field would not meet the demands of domestic consumers of the Muskegon Gas Co. which last winter had a maximum sendout of as high as 2,500,000 feet. The company has an increased heating load at present.

Of the average daily production of 2,000,000 feet slightly less than 50 per cent comes from Dundee wells and the rest from the upper and lower Traverse producers. Dundee gas is dropping off more rapidly than the Traverse. Production of the West Michigan Consumers Co. dropped 400,000 feet during the past month, according to Mr. Robinson.

It was said by Mr. Powell that if the change back is made now there will be little chance of another changeover to natural gas unless a supply great enough to insure gas for 8 to 10 years is discovered in deeper pay sands in the Muskegon Field.

"It will have cost the Muskegon Gas Co. $160,000 to make the changeover and back, an expense which we will not authorize again without assurance of a longer period in which to pay off the investment," he said.

The small amount of gas struck in the deep test in the Monroe formation had a high B.t.u. content of 1,334 units as tested by Mr. Robinson. While this indicated the presence of oil no oil had been encountered at 2,270 feet.

GAS FOR LOUISIANA TOWNS

SHREVEPORT, La., Nov. 15.—A step toward putting natural gas in Avoyelles and Marksville was taken by the Avoyelles Parish police jury when a resolution was passed which grants the Texas-Louisiana Pipe Line Corp. permission to cross parish roads and highways. A crew is expected to be put to work laying the pipe as soon as the right of way is cleared. Gas is to be supplied to the towns of Bunkie, Mansura, Cottonport, Evergreen and Marksville in Avoyelles Parish. All of these towns gave a 25-year franchise to Moody-Seagraves Gas Co. of Houston to supply natural gas to them within 12 months.

GAS FOR PETERSBURG

The West Texas Pipe Line Co. has a gas line under construction to Petersburg, Tex., and the gas company is laying the lines in the city, which work will require about 15 days to complete. It is thought the line will be ready to serve the town with gas by December 1 or possibly earlier.

NEW ORLEANS USING ODORANT

The gas department of New Orleans Public Service, Inc., is odorizing its natural gas. An oil known as Calodorant No. 3, which is manufactured by the Standard Oil Co. of California, is being used to impart a sulphurous odor to the gas. Only 3½ gallons of oil per 1,000,000 cubic feet of gas is required. The oil is injected into the gas mains by means of automatic control so that as the gas flow changes the oil flow changes proportionately. The gas going to the low pressure system, which supplies domestic and commercial consumers, is the only gas being odorized at present. The high pressure gas will probably be odorized from time to time to detect any leaks in the welded steel mains.

AMERICAN NATURAL GAS CORP.

Consolidated gross revenues, including other income, of American Natural Gas Corp., a subsidiary of Tri-Utilities Corp., were $11,204,801 for 12 months ended July 31, 1930. Operating expenses and general taxes were $6,354,696, leaving balance of $4,850,115. After all deductions of subsidiary companies, including depreciation and depletion, there remained $1,618,816 and after interest paid or accrued on unfunded debt and after miscellaneous deductions there was a balance of $787,685 for dividends.

Oklahoma Natural Gas Corp., a subsidiary of American Natural Gas Corp., has signed a contract with the Oklahoma Gas & Electric Co. to supply natural gas to the latter company's Riverbank electric power plant at Muskogee, Okla. This plant will use natural gas for fuel in generating electricity and will require from 6,000,000 to 10,000,000 cubic feet daily.

NEW MEXICO REORGANIZATION

Southern Union Gas Co., with headquarters at Dallas, Tex., has announced a reorganization of its New Mexico properties, and is establishing subheadquarters at the Albuquerque and Artesia offices. The Albuquerque division will control the company's property in Albuquerque, Santa Fe, Las Vegas and other smaller cities in the northern and central part of the State. The Artesia division controls operations in Artesia, Hagerman, Carlsbad, Lovington, Clovis, Portales, Tucumcari and smaller companies in southeastern New Mexico and Texas. Operations in the territories in Texas, Arkansas, Louisiana and Mississippi will be under the direction of the Dallas office.

EXPERT STUDIES GAS

CHATHAM, Ontario, Nov. 15.—H. R. Davis, consulting engineer, of Buffalo, is in Alberta and Montana studying sources of supply and pipe line routes of the various projects for supplying natural gas to Regina and other Saskatchewan cities. Mr. Davis was retained by the cities concerned to give an independent expert opinion upon the various franchise propositions submitted; and it is expected that the franchise will be awarded largely on the basis of his recommendations.

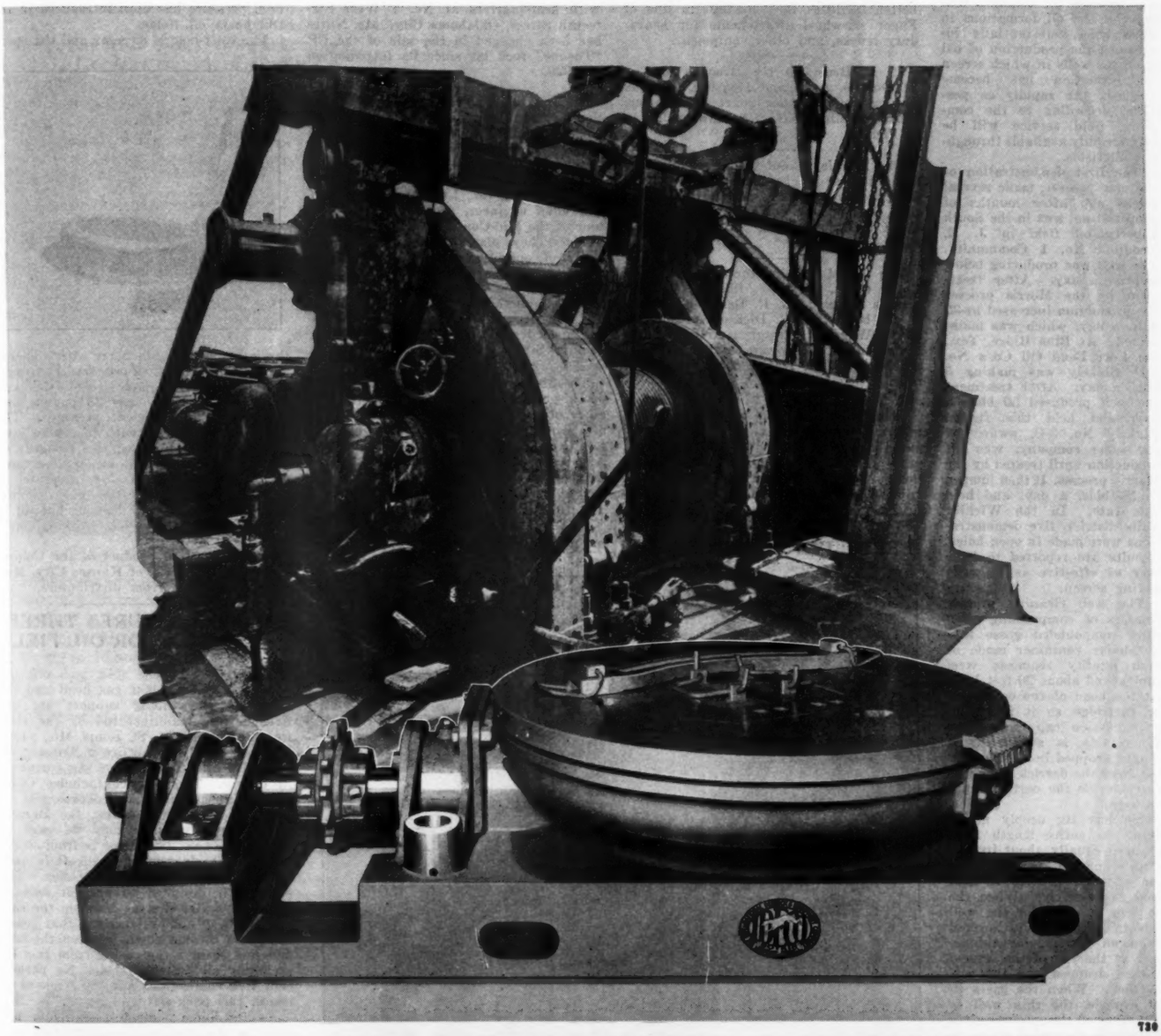
HIGH PRESSURE HOLDERS

According to Allen T. Fesler, general superintendent of the Santa Maria Gas Co., Santa Maria, Calif., the company recently completed a vertical high-pressure gas holder of 154,000 cubic foot capacity at Paso Robles, and has under way three others of the same type and capacity, two, nearly completed, in the industrial district of Santa Maria, the other to be completed by December 1, at Lompoc.

IDECO BOYKIN

PIONEERS in Rotary drilling equipment, today IDECO-BOYKIN is maintaining its leadership with improved and more powerful Rotaries and Draw Works to meet the deeper well problems.

The IDECO-BOYKIN 27½" Oilbath Straight Rotary is recommended for drilling to 10,000 feet. The companion piece to it is our improved "Super Duty Draw Works."



730

THE INTERNATIONAL DERRICK & EQUIPMENT CO.

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EXPORT OFFICES—90 WEST STREET, NEW YORK CITY; COLUMBUS, OHIO; HOUSTON, TEXAS;

LOS ANGELES, CALIFORNIA » » » OFFICES AND WAREHOUSES IN ALL ACTIVE FIELDS

Oil Field Equipment and Supplies

GASES FROM EXPLODING CARTRIDGE CLEAN WELL

The Morris Co., with temporary offices in the Sam Houston Hotel, Houston, Tex., has introduced a new device and process for cleaning well screens and oil formations in open holes, substantially increasing the production of old wells, or wells in which screen or formation has become clogged. As rapidly as possible, according to the company, field service will be made readily available throughout oil fields.

The first demonstration of the new process, made several weeks ago after months of shop testing, was in the South Liberty oil field in J. E. Teddlie's No. 1 Community. The well was producing below 5 bbls. a day. After treatment by the Morris process the production increased to 32 bbls. a day, which was maintained. At Blue Ridge, Tex., the Fort Bend Oil Co.'s No. 1-D Blakely was making 5 bbls. a day. After treatment the well produced 50 bbls. a day, and held this figure. Blakely No. 3-C, owned by the same company, was off production until treated by the Morris process. It then jumped to 30 bbls. a day, and held this rate. In the Wichita Falls district, five demonstrations were made in open holes. Results are reported to have been as effective as in wells having screen.

The well cleaning process consists of compressing carefully compounded gases into a tubular container made of high quality seamless steel tubing and about 20 feet long. At the head of the container, or cartridge as it is called, a percussion cap is exposed. When this is struck by a weight dropped inside the tubing from the derrick floor, the gases inside the cartridge are exploded.

The cartridge has six deeply milled grooves running its entire length from end to end, spaced equally about its circumference. Just enough metal is left in the bottom of these grooves to hold the compressed gases safely. When the cartridge has been charged for the well in which it is to be run, it is lowered into the screen on the regular tubing, and packed off at the top of the screen. A weight is then dropped and the percussion cap struck. When the gases in the cartridge explode, the thin wall of metal in the bottom of the grooves gives away, permitting the expanded gases to enter the screen or oil formation with sufficient force to clean all openings or formation pores of accumulated scale, rust, corrosion, caked sand, heavy b.s., etc. Oil also is forced back into the pores of the formation, dissolving paraffin, b.s., etc., and opening them up for the free flow of oil.

The cartridge retains its tubular shape after the explosion, and is so constructed that nothing can be left in the hole. After the explosion, it is pulled from the hole and disconnected. The working barrel is then run in, rods and plunger are replaced, and the well is put back on the pump.

After a year's leave of absence on account of illness, John H. Baird has returned to service with Byron Jackson Co. in charge of its export sales office at 1245 Graybar Building, New York.

AMONG THE EQUIPMENT HOUSES

The H. & H. Equipment Co., Tulsa, has moved to new quarters at 413-15 North Main Street where it will have better facilities for showing its line of Fager six-wheel attachments for heavy-duty trucks, and other equipment.

C. A. Brust, of the Brust Tool Co., El Dorado, Ark., and Houston, Tex., is making temporary headquarters in Corpus Christi while visiting Southwest Texas oil fields.

The Headley Emulsified Products Co., manufacturer of asphalt waterproofing, dampproofing, coating and paving materials, has opened a New York office in the Chrysler Building in charge of P. L. Fosher.

The board of directors of Kewanee Boiler Corp., Kewanee, Ill., elected officers as follows: B. F. Baker, chairman of the board; R. B. Dickson, president; E. F. Wagner, secretary; Arthur Cook, treasurer; R. M. Powers, assistant secretary, and E. H. Karau, assistant treasurer.

Templeton, Kenly & Co., Chicago, manufacturers of Simplex jacks, have prepared a poster stamp for their distributors bearing the slogan, "The foundation of economical service is the distributor."

The Chicago Pneumatic Tool Co. has appointed W. J. Nutto manager of the Mid-Continent division of oil tool sales with headquarters at No. 1 West Sixteenth Street, Oklahoma City. Mr. Nutto has been engaged in the sale of the CP "Tucone" rock bit since its introduction in 1929.

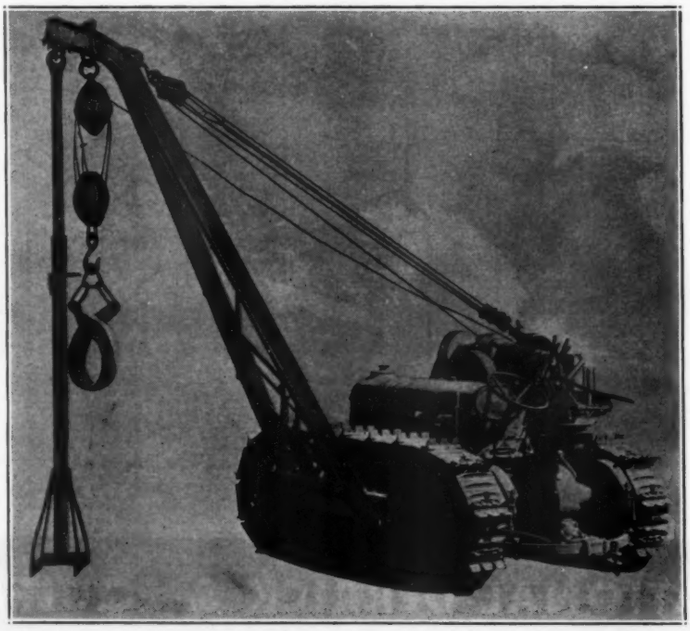
E. J. Atckison, vice president of the Southwestern Engineering Corp. of Los Angeles, Calif., was in Chicago for the opening of the annual meeting of A.P.I.

J. C. Axelson, president of the Axelson Manufacturing Co., Ltd., and L. F. Merrill, chief engineer, are on an extended tour of the Mid-Continent and eastern oil fields. They plan to make a detailed study of operating and business conditions.

The John Muller Co., Fort Worth, Tex., distributor for Buda engine parts has opened a branch office at 1509 San Jacinto Street, Houston, Tex.

The Shaffer Tool Works, manufacturer of hi-pressure control equipment and other oil field specialties, has opened an office in the Subway Terminal Building, Los Angeles, Calif. Frank Mason, Los Angeles representative, formerly superintendent of the Brea plant, will be in charge, assisted by Norman LeRoy.

BERG LIVE BOOM IS OF WIDE USE IN HANDLING PIPE



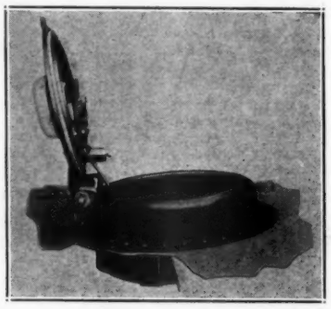
The Berg pipe handling boom, manufactured by the Resistcor Engineering Corp., Tulsa, was developed by Matt Berg of the Cushing Motor Co., 112 South Elgin Avenue, Tulsa, a practical pipe liner, as well as an authority on tractors and equipment. It is a live boom job, moving up and down to pick up or lower the pipe. It is mounted directly to the crawler frames, and the hoisting drums are so mounted that they help to counterbalance the weight of the boom. The lever controls of the hoisting mechanism are close to the driver's right hand and there is no obstructing framework to interfere with his vision.

Some of the many uses for this unit are stringing pipe, lining up pipe, lowering pipe into trenches, backfilling, making side bends, overbends and sages without having to cross over line, and setting poles for telephone, telegraph and power lines. The Berg boom is especially designed to conform with the construction features of Trackson full crawlers. The boom support and hoist are mounted on and entirely supported by the track frames and axles which are generously proportioned to carry all load stress. The standard boom for pipe line work has a lifting height of 12 feet under the cable block.

COLUMBIAN INTRODUCES AUTOMATIC THIEF-HOLE

A new balanced valve thief hole that automatically opens under 2½ to 3-ounce inside pressure and provides a large air inlet with less than one-half-ounce vacuum pressure has been introduced in the Oklahoma oil fields.

The thief-hole is circular and the opening is 14 inches in diameter with a bucket shelf inside which permits the thief operator to take his samples inside the tank proper. The lid weighs 35 pounds and it rises under sufficient pressure. The air inlet operates with a valve and counterweight which requires virtually no pressure to open. This same valve, however, when under inside pressure is pressed firmly against the inlet opening, making a tight seal. The mechanism is without springs or other working parts to get out of order.



The device is a product of the Columbian Steel Tank Co. of Kansas City, Mo., and is available from distributors.

BARSCO FEATURES THREE DEVICES FOR OIL FIELD

The Barsco-Breene split pack-off, the Barsco-Breene No-bolt gas head and the Barsco-Breene tubing support are oil-field devices manufactured by the Bartlesville Supply Co., St. Louis, Mo., which has opened a district office in Tulsa, with J. O. Buchta, treasurer of the company, in charge. The district includes Oklahoma, Kansas and eastern Texas.

If the packer is leaking, the Barsco-Breene split pack-off may be used to shut in the gas. If the gas is from strata above the casingseat the packoff is used with a Barsco-Breene gas collar. The pack-off is designed to prevent damage from salt water flowing between the casings, to keep out obstructions that sometimes are thrown down between the casings and to save the casing from rust by excluding air from the hole. No permanent well connections need be removed to install this pack-off.

As its name indicates, no bolts are used in the Barsco-Breene No-bolt gas head, for which a patent is pending. The packing is compressed by a spider instead of slips. The gas head has male thread for outside installation in case the well blows out. It takes only a small amount of space in the cellar and allows sufficient slip length and packing length. It can compress the packing with or without the weight of the casing. It has an all forged-steel body and there are no outstanding lugs to interfere with outside installation.

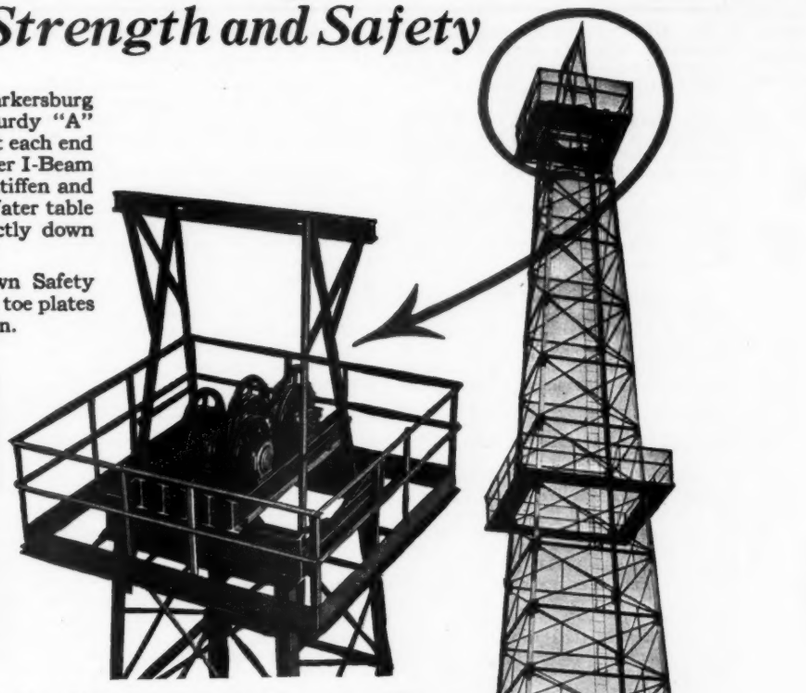
The Barsco-Breene tubing support, for which also a patent is pending, is of the spider type and the packing is compressed by spider instead of by slips. Tongue slips are used. This tubing support, which is of unusual height, is designed for wells of any depth. It has ears on each side to be used in case the tubing breaks off, to be used with elevator rings (in emergency).

Parkersburg Derricks

with Added Strength and Safety

Improved Gin Poles of Parkersburg A.P.I. Derricks consist of sturdy "A" Frame Legs of 4-inch angles at each end which rigidly support the center I-Beam Girt. Outside double braces stiffen and add resistance to side pull. Water table beams transfer the load directly down the legs.

The 2-foot walkway of Crown Safety Platform has close-fitting steel toe plates which assure safety of workmen.



Parkersburg clamps illustrated above bind the Crown Block securely on the water table in exact alignment and eliminate drilling holes in the beams. These clamps are adaptable to any type Block. They provide easy adjustment, but when tightened they hold.

Parkersburg Products

Steel Derricks and Crown Blocks

Rig Irons

Portable Drilling Machines (Wood and Combination-Steel)

Sand Reels

Steel Wheels

All-Steel Rigs

Bolted Tanks

Miscellaneous—
Drilling Equipment
Steel Walking Beams and Pitmans

THE PARKERSBURG RIG AND REEL CO.
TRADE MARK REG.

This Mark on Parkersburg Equipment is Your Guarantee of Highest Quality and Performance.

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173-A

Oil Field Equipment and Supplies

WRISTPIN IS DESIGNED BY PRACTICAL OIL MEN

The Wilcox wristpin, made by the Oil Field Engineering Corp., Fort Worth, Tex., and designed by practical production men, has three parts, the pin, the

bearing sleeve and the pitman retaining lock-nut.

All parts are machined from forgings of chrome-nickel steel electrically heat treated to develop the maximum physical properties in the steel. Pins, sleeves and retaining nuts are precision machined to insure interchangeability of parts. All pins are furnished with left-hand threads to afford a constant tightening action from the motion of the rig. For pumping units operated in reverse motion right-hand threads are supplied.

The wristpin can be driven in or out of a tight crank-hole without damaging the threads. A large fillet has been turned on the end of the pin for this purpose.

Installation of the wristpin is simple. The pin is inserted through the crank from the rear, and the bearing sleeve is run by hand over the pin and set up against the crank with a sledge hammer. The pitman is placed on bearings and the retaining nut is screwed on the end of the pin.

DRILLING MUD HANDBOOK

A handbook of 44 pages devoted to rotary drilling mud has been issued by the California Talc Co., 837 Jackson Street, Los Angeles, Calif. "Rotary Drilling Muds," "Functions of Drilling Muds," "Properties of Colloids" and "Action of Colloidal Matter in Drilling Muds" are subjects treated. Supplementing the text are pictures, diagrams and charts. Copies of the handbook may be obtained by writing to the company.

NOTES ABOUT TRADE LITERATURE

The Allis-Chalmers Manufacturing Co., Milwaukee, Wis., has prepared a 16-page illustrated bulletin descriptive of its Type SSU centrifugal pumping units.

The Brown Instrument Co., Philadelphia, Pa., is sending out a broadcast advertising the Brown electric CO_2 meter, designed to eliminate calculations.

A bulletin describing the Landis automatic forming and threading machine is being mailed by the Landis Machine Co., Waynesboro, Pa.

The current number of the Worthington News, published by the Worthington Pump & Machinery Corp., Harrison, N. J., contains an interesting article telling of the part Worthington pumps, compressors and air lifts are playing in flooding operations in the old Bradford oil field.

The Novo Engine Co., Lansing, Mich., is sending out a folder devoted to Novo Flud-Lite units designed for night work in the oil fields, construction camps, etc.

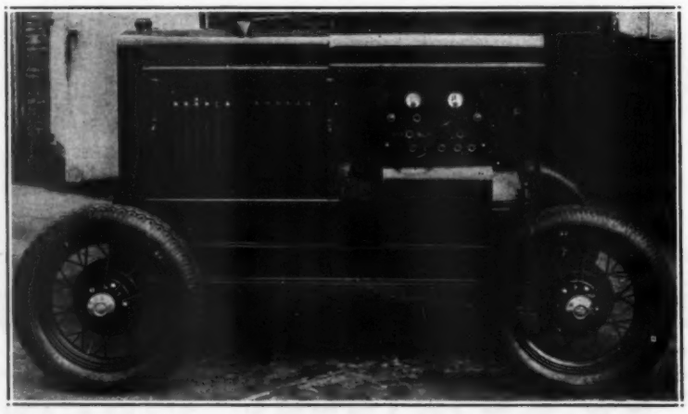
"Mechanically Operated Fluid Meters" is the title of a new bulletin being distributed by the Bailey Meter Co. of Cleveland, Ohio. It describes and illustrates various types of mechanically operated meters and auxiliary equipment for their installation.

The Pittsburgh Equitable Meter Co., Pittsburgh, Pa., has issued two new catalogs giving information about Emco balanced valve regulators and the new Emcorector.

CATERPILLAR SALES CHANGES

Following are changes in the sales department made recently by the Caterpillar Tractor Co., Peoria, Ill.; J. J. Crumbaugh, manager of New York office, transferred to the export department and assigned to work abroad; Arthur C. Jenvey, assistant sales manager in Peoria, transferred to New York as manager of the New York office, succeeding Mr. Crumbaugh; W. H. Goodwin, assistant sales manager in charge of the Denver sales division, transferred to Peoria as general assistant to E. R. Galvin, sales manager; A. E. Loder, general supervisor of construction and governmental sales, made eastern representative of the newly formed experimental and development division; C. A. Spears, supervisor of construction and governmental sales in San Leandro, Calif., transferred to Peoria, succeeding Mr. Loder; L. G. Lawrence, district representative in Ohio, transferred to the western division as district representative in Los Angeles; Sam M. Miller, assigned to the territory as district representative formerly covered by Mr. Lawrence; C. D. Price, special representative of the sales department in Peoria, transferred to the western division as district representative out of San Francisco; R. I. Wallingford, former district representative in the Amarillo, Tex., territory, assigned to special work; P. R. Ferrell made district representative in the territory formerly covered by Mr. Wallingford; F. M. Stewart, district representative in Great Falls, Mont., assigned to special work; H. G. McClurg, appointed district representative in the territory recently covered by Mr. Stewart; A. H. Snow, former district representative in the Grand Forks territory, transferred to the export department; T. V. Marks, formerly on special work, appointed district representative to succeed Mr. Snow; L. W. Werner, assigned to the Glendive, Mont., territory; E. I. Stouffer, made assistant sales manager in charge of the eastern portion of the eastern sales division.

"DUALARC" BRINGS OUT A LIGHT, PORTABLE WELDER



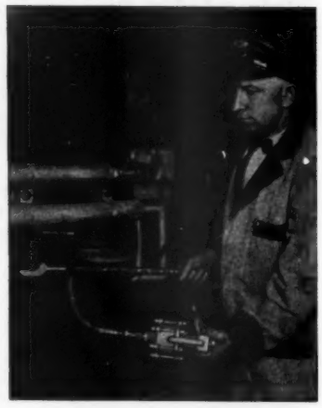
The Electric Arc Cutting & Welding Co., Newark, N. J., announces a new all-purpose portable welder for structural work. The accompanying illustration shows a Dualarc welding set complete, powered by a Buda "Hivelo" Model H-199 engine. This makes a light, compact unit that can be dragged by tractors, horses or mules over rough roads or ground, such as often are encountered in pipe line work or construction of buildings.

This set is made in three sizes—one and two arc—so as to meet all conditions of both cutting and welding. The generator is arranged with alternating current and separate transformer so as to furnish small power and lights, which are not dimmed while welding. This transformer also provides for operation of drills, grinders and the A.C. semi-arc flash process.

The engine is equipped with an electrically operated idling device so that the engine is running at low speed except when called upon for actual welding.

TOOLS MADE TO REDUCE WORK OF GREASING JOB

Anyone who has witnessed the labor incident to automobile lubrication will appreciate the utility of the new Fairmount spring shackle greasing bars, ac-



cording to the manufacturer, the Fairmount Tool & Forging Co., Cleveland, Ohio. These new tools are designed to eliminate the hard work incident to loosening shackles, permitting a quick and positive flow of grease where needed. They are said to assure the proper spring balance by preserving the shackles and bushings. The new tools are being offered in six numbers 288, 295, 296, 297, 298 and 299, through leading automotive jobbers throughout the country. The accompanying photo shows the No. 295 straight type bar in use.

JOB OF REPAIRING LEAK IN LINE IS SIMPLIFIED

Grimes new style clamps, made by the George W. Grimes Co., Bluffton, Ind., are designed to eliminate much of the labor and trouble of repairing pipe line leaks, turning disagreeable tasks into relatively simple, light and inexpensive operations.

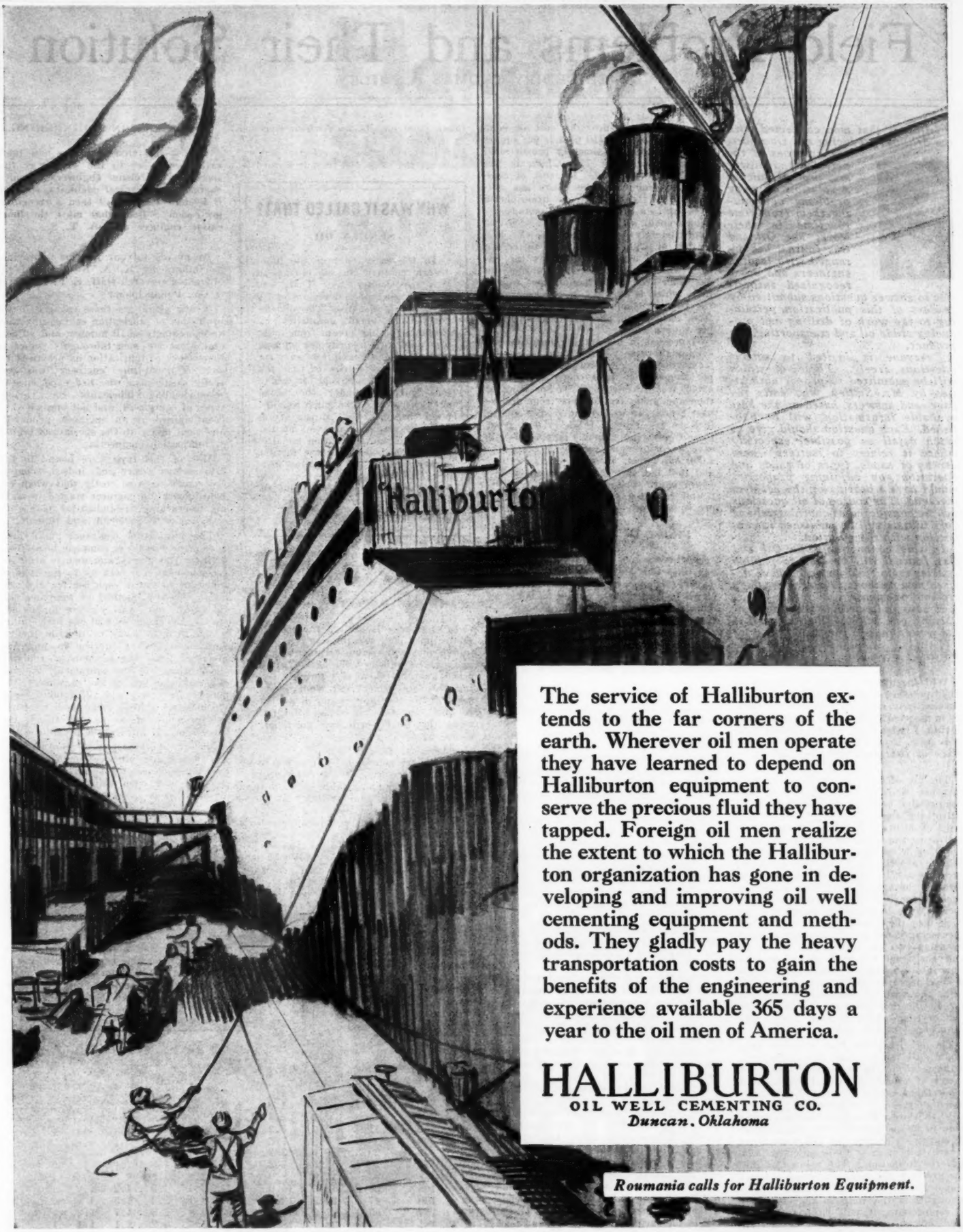
The hole need be dug only a few inches under the pipe, just far enough to permit slipping the U-saddle bolts, oil-proof packing and the section of old pipe into place. The semifinished hexagonal nuts on the U-bolts are then on top and are tightened easily with solid end or other wrenches. This completes the repair.

LATCH HOLDS SWITCH CLOSED

The General Electric Co. announces its CR-2811 magnetic switch for use on either alternating or direct current circuits. This switch is provided with a latch which holds the contactor closed. Such a condition is particularly desirable (1) where the hum of a standard magnetic switch must be eliminated; (2) where the power consumed to hold the contactor closed by the usual method must be eliminated because of cost, and (3) where the switch must not open in case of coil failure, power failure or short circuit. The device of a two or three-pole, a-c contactor with a latching mechanism, mounted on a base and with or without an enclosing case. The contactor is standard except for an extension of the shaft to which the latching mechanism is attached.

NEW STORE AT ORANGE, TEX.

The Oil Well Supply Co. has announced the opening of an office and supply store in Orange, Tex.



The service of Halliburton extends to the far corners of the earth. Wherever oil men operate they have learned to depend on Halliburton equipment to conserve the precious fluid they have tapped. Foreign oil men realize the extent to which the Halliburton organization has gone in developing and improving oil well cementing equipment and methods. They gladly pay the heavy transportation costs to gain the benefits of the engineering and experience available 365 days a year to the oil men of America.

HALLIBURTON
OIL WELL CEMENTING CO.
Duncan, Oklahoma

Roumania calls for Halliburton Equipment.

Would you, as a reader of The Oil and Gas Journal, like to receive copies of THE CEMENTER as issued? Each number contains interesting information about cementing and drilling fluids. There is no cost or obligation—simply sign your name below and mail to Halliburton Oil Well Cementing Co., Duncan, Okla.

Name_____ Address_____

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

USING TWO GAS SEPARATORS

Will the use of two gas separators on high pressure wells have the effect of substantially reducing compression costs, as is asserted? If it will effect a major saving I wish you would explain how it is done, if that would come within the scope of your department.—E. E. L.

The use of two gas separators on high pressure wells is recommended to save compression costs by H. C. Miller, senior petroleum engineer, United States Bureau of Mines. For the purpose of illustrating the saving in compression costs resulting when two separators are used, assume a well, in which the formation pressure is 710 pounds per square inch, flowing through a flow bean against a back pressure of 280 pounds per square inch. Were it desired to inject this gas back into the formation, the cost of repressuring could be considerably reduced by using two gas separators. If the oil and gas from the well are allowed to flow into a separator from which the gas is discharged at 280 pounds per square inch, the cost of compressing this gas for re-injection purposes would be the cost of compressing it from 280 to 710 pounds per square inch.

The oil from the high pressure trap would still contain some gas in solution, perhaps about 50 to 60 cubic feet per barrel of oil, which would be released when the pressure is reduced to atmospheric pressure in the second or low pressure separator. This gas, of course, would have to be compressed from atmospheric pressure to a pressure of 710 pounds per square inch if it is to be injected back into the formation. The volume of this low pressure gas, however, is but a small proportion of the total volume of gas coming from the well, so that the cost of compressing it will be but a small part of the total compression cost. Often, too, the gas will be needed for fuel and will not have to be compressed.

If the high pressure trap is not used and all the gas is allowed to expand to atmospheric pressure, the cost of compressing it back to 710 pounds per square inch will be approximately proportional to to logarithm of 710, which is 2.8. By "double trapping," the cost of compressing practically the entire gas output from the well, from atmospheric pressure to a pressure of 280 pounds per square inch, will be saved. This cost is approximately proportional to the logarithm of 280, or 2.4. The difference between 2.8 and 2.4 represents the energy which is required to compress the gas from 280 to 710 pounds per square inch, which is only 0.4 or one-seventh of the cost of compressing it all the way from atmospheric pressure to 710 pounds per square inch.

Expressed in monetary values and assuming that the cost of compressing gas from atmospheric pressure to 280 pounds per square inch is 4 cents a thousand cubic feet, the cost of compressing a thousand cubic feet of gas from atmospheric pressure to 710 pounds per square inch is 4⅔ cents. It is evident from these figures that "double trapping," will save a compression cost of 4 cents per 1,000 cubic feet, based on energy ratios, and that but two-thirds of a cent is the approximate cost of compressing 280-pound gas to a pressure of 710 pounds per square inch.

FROST IN HOT WEATHER

Stories are told about frost forming on gas lines and on oil and gas separators on hot summer ways. I have been inclined to regard these stories as bunk, as nobody has been able to tell me why the frost should form. One man that I asked about it said it was expansion, but he didn't make it clear just what expanded or why that should make frost. Is there anything in these stories?—D. E. S.

Stories about frost and ice forming on oil and gas lines are based upon facts. They are actual occurrences in many fields and are easily explained.

Gas coming from underground where it has been under pressures of several atmospheres, or several times 14.7 pounds per square inch, and expanding to atmospheric pressure requires heat to assist in this expansion process.

When a cubic foot of gas in compressed many times it occupies a very small amount of space and consequently cannot hold a great amount of heat among the molecules that make up the gas.

Therefore as this gas expands and occupies more space this deficiency in heat will be made up by taking heat from any object with which it comes in contact and as it is flowing through pipe lines, oil and gas separators and flow lines the heat that is in them is given up to the gas.

These lines and pieces of equipment are surrounded by an atmosphere containing more or less water vapor and as the temperature of the air is reduced by coming in contact with the cold pipes or steel making up the separators this water is congealed into frost or ice and accumulates, sometimes to a thickness of several inches.

This explains the accumulation of frost and it is generally accepted by operators. There is another theory that involves the demand of heat from the atmosphere to satisfy the operation that is followed when a liquid is expanded into a gas.

Under certain conditions of temperature and pressure it is reasonable to assume that certain gases exist underground in a liquid state and as this fluid ascends in the flow lines from the bottom of the well to the surface this pressure and temperature are relieved and the liquid expands to gas. In so doing it will require heat to compensate for the natural deficiency in this gas, and this heat will be taken from objects with which it comes in contact.

Whichever process is effective the results are the same and frost is formed on pipes and other objects, indicating that some change is taking place inside the vessels of pipes.

WHY WAS IT CALLED THAT?

SENECA OIL

In the early part of the nineteenth century an oil spring in Allegany County, New York, was widely known in that region for its medicinal properties. The oil, recovered in small quantities by skimming it like cream from milk, was used as a remedy for sprains and rheumatism and for sores on horses. In the course of time the oil was bottled and sold for medicinal purposes under the name of "Seneca oil." The name was applied because the spring from which it was obtained was on the Seneca Indian reservation and the oil long had been known for its curative powers by medicine men of the tribe. The designation came to be applied to petroleum obtained from other sources before the Drake well was drilled.

CARRYING CAPACITY OF PIPES

It sometimes is desired to know how many pipes of a certain size will be required to get the same carrying capacity as a given number of pipes of another size. Probably there is a formula covering this, or better still some kind of table giving the information at a glance. If you can give me some information along this line it will save me a lot of time.—S. S. T.

This department is glad to give you both the formula relating to the carrying capacities of pipes and a table based on the formula. At the same velocity of flow the volume delivered by two pipes of differing size is in proportion to the squares of their diameters. For instance, one 4-inch pipe will deliver the same volume as four 2-inch pipes. With the same head, however, the velocity in the 2-inch pipe is less than that in the 4-inch, and the volume delivered varies about as the square root of the fifth power (that is, the 2.5 power).

The subjoined table has been made on this basis. The figures at the intersection of any two sizes (found by reading across and down) represent the number of the smaller diameter pipes needed to provide the carrying capacity of one of the larger. For instance, one 5-inch pipe has the carrying capacity of 9.9 2-inch pipes.

1	2	3	4	5	6	8	10	12	14	16	18
5.7	1	.....	....	....	....	...	...	...	...	...	...
15.6	2.8	1	....	....	....	...	...	...	...	...	...
32	5.7	2.1	1	....	....	...	...	...	...	...	...
55.9	9.9	3.6	1.7	1	....	...	...	...	...	...	...
88.2	15.6	5.7	2.8	1.6	1	...	...	...	...	...	...
130	22.9	8.3	4.1	2.3	1.5	...	...	...	...	...	...
181	32	11.7	5.7	3.2	2.1	1	...	...	...	...	...
243	43	15.6	7.6	4.3	2.8	1.3	...	...	...	...	...
316	55.9	20.3	9.9	5.7	3.6	1.7	1	...	...	...	...
401	70.9	25.7	12.5	7.2	4.6	2.2	1.3	...	...	...	...
499	88.2	32	15.6	8.9	5.7	2.8	1.6	1	...	...	..
609	108	39.1	19	10.9	7.1	3.4	1.9	1.2	...	...	...
733	130	47	22.9	13.1	8.3	4.1	2.3	1.5	1	...	...
787	154	55.9	27.2	15.6	9.9	4.8	2.8	1.7	1.2	...	...
.....	181	65.7	32	18.3	11.7	5.7	3.2	2.1	1.4	1	...
.....	211	76.4	37.2	21.3	13.5	6.6	3.8	2.4	1.6	1.2	...
.....	243	88.2	43	24.6	15.6	7.6	4.3	2.8	1.9	1.3	1
.....	278	101	49.1	28.1	17.8	8.7	5	3.2	2.1	1.5	1.1
.....	316	115	55.9	32	20.3	9.9	5.7	3.6	2.4	1.7	1.3

LUBRICATION ENGINEERING

Is it a fact that there are now lubrication engineers in the same way that there are petroleum engineers, chemical engineers, mechanical engineers, etc.? If it is, how long has it been a recognized profession? Just what must the lubrication engineer do?—A. T. S.

An answer to your question is provided as follows by K. A. Newman, of the Houghton research staff, E. F. Houghton & Co., Philadelphia:

A few years ago those engaged in the profession of lubrication engineering were an exceedingly small number, and, in general, were not men thoroughly versed in the science of lubrication as practiced today. The old-time "engineer" was generally a salesman who had experience in recommending lubricants for various types of equipment, and not one who had been trained as an engineer, primarily, and then taken up the specialized branch of lubrication engineering.

Men of this type were bound to fall into serious errors and, indeed, some of the errors were so costly that when the true lubrication engineer started to make his appearance in industrial plants he was met with suspicion and ridicule.

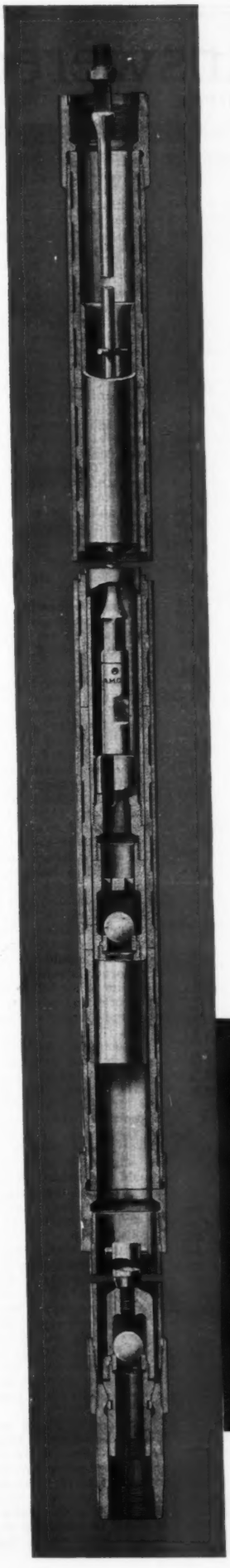
The lubrication engineer's main duty is to make surveys or complete inspections of industrial plants, and then to offer his recommendations, both as to the type of lubricant to use in each bearing and also as to the best method of applying this lubricant. He must observe during his survey, the thousand and one little things which tend to make or destroy the effectiveness of the lubrication program. He must know the methods of applying the lubricant to the equipment, the mechanical condition of the equipment, the maintenance costs and oiling labor costs. He must be able to make such mechanical recommendations as will insure the success of his lubrication program.

Some of the examples of poor mechanical design and practice found by a lubrication engineer are so simple that one wonders why such things are ever allowed to exist.

The point of application of the lubricant to the bearing is of paramount importance and yet is one of the most frequently overlooked items. The oil should always be applied to the bearing at the point where the resistance to its entry into the clearance space is at a minimum. The point to be considered is the direction of the load, which is the resultant of the dead load, belt pull, direction of rotation, and speed.

To watch the lubrication engineer at work while checking over the problems of lubrication in a steam engine is really worth while, for it is on this and other primary movers that the engineer shows his true capabilities.

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY



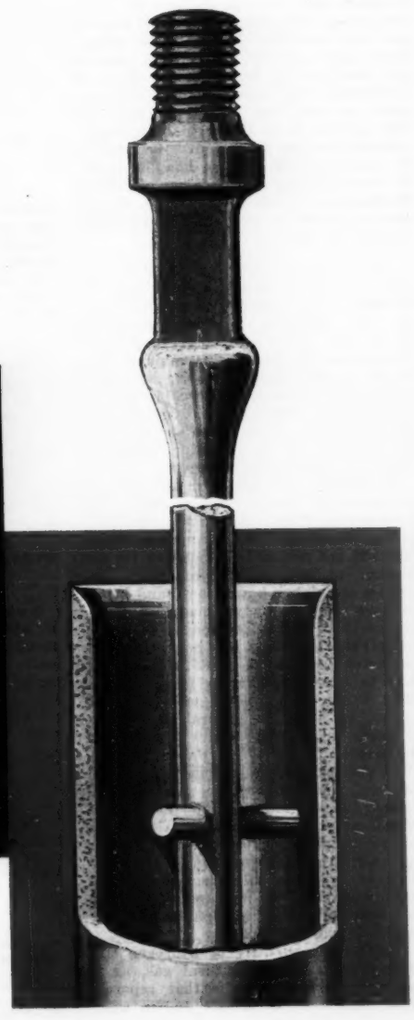
Handles sand without sacrifice of fluid Volume

Total fluid volume is the determining factor in pumping oil wells and the Axelson Barnwell Plunger not only handles large quantities of sand but handles it without lowering production of the well.

Valves are close together and for this reason gas troubles are eliminated. The top of the Barnwell Plunger is open, allowing free passage of oil into the fluid column. There are no production congestions, for the fluid carries the sand free and the wells are kept clean.

The construction of the plunger is such that a slight expansion is possible on the up stroke which keeps the liners clean of sand while on the down stroke the frictional resistance is decreased.

These are the salient features. Let our representatives tell you about this plunger in detail.



AXELSON BARNWELL PLUNGER ASSEMBLY

Axelson Manufacturing Co., Ltd.

P. O. Box 337, Los Angeles

Tulsa St. Louis New York City, 30 Church St.

Mid-Continent and Eastern Distributors

FRICK-REID SUPPLY CORPORATION

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

SULPHUR IN NATURAL GAS

It is highly probable that city gas will be mixed with natural gas to a large extent because of the large supply of natural gas now available. The question arises: How much sulphur is there in natural gas and in what form does it occur? I understand that many natural gas supplies are quite low in sulphur and that this sulphur is in the form of hydrogen sulphide so that the gas may be purified by means of the process now in vogue. If much sulphur in the form of carbon bisulphide or similar compounds, it will not be possible to procure a sulphur-free fuel—A. C. R.

Natural gas, as it is marketed, is free from corrosive sulphur because the distributing companies do not purchase natural gas containing appreciable quantities of sulphur. There are large supplies of natural gas that contain no sulphur when tested by the usual methods, but there are others that are of little value because of the high percentage of hydrogen sulphide. Most of the gas obtained from petroleum during the refining operation shows a high sulphur content.

It appears that all high sulphur oils and gases are not equally corrosive, but that certain forms of sulphur, especially in the presence of water and acid forming salts are primarily responsible for the damage to equipment. Numerous compounds of sulphur have been found in petroleum and gas by various authorities, but many of these are thought to be decomposition products. As natural gas is intimately associated with petroleum, it may be expected that the forms of sulphur found in petroleum may, to some extent, be found in natural gas. C. E. Waters, in United States Bureau of Standards, Technological Paper 177, 28, 1920, mentions free sulphur, hydrogen sulphide, and the organic sulphur compounds mercaptans, thiophanes, thiophenes, sulphonic acids and possibly some organic sulphates. However, the sulphur is present in most natural gas in the form of hydrogen sulphide and possibly small quantities of mercaptans. We do not know of carbon bisulphide being reported in natural gas.

The largest quantity of hydrogen sulphide known in any natural gas, as it comes from the wells, is that reported from some wells in Mexico and in west ern Texas. Several instances of natural gas from Texas have reported so much as 15 per cent by volume, but as above indicated, such gas is not marketable. In fact, gas containing more than a trace of hydrogen sulphide cannot be used for domestic purposes; in quantitative terms the rule for artificial gas, that is no more than 0.05 per cent, or a negative lead acetane test, seems to be followed.

The reason that hydrogen sulphide is so objectionable is its toxic properties and its corrosive action on metals. A content of 0.005 to 0.02 per cent may cause symptoms of poisoning, according to Bureau of Mines Bulletin 231, Investigation of Toxic Gases from Mexican and Other High Sulphuric Petroleum and Products, 1925. Hydrogen sulphide is known to be corrosive in the presence of small quantities of water. Usually storage tanks for oil fail along the tops above the surface of the oil except when water is permitted to accumulate, then the bottoms and lower parts of the tanks will corrode. Hydrogen sulphide is responsible for graphitic corrosion of iron. Speller, in Corrosion, page 509, cites an example of water containing only one-half of one part per 1,000,000 causing the failure of iron pipe within three years. The corroded metal was reduced to ferrous oxide 49 per cent, ferric oxide 3 per cent, and only 6 per cent metallic iron. A hard inner layer contained elementary sulphur 12 per cent, iron sulphide 2 per cent, ferrous oxide 21 per cent and ferric oxide 46 per cent.

The removal of hydrogen sulphide is usually accomplished by treatment with alkaline materials or alkaline solutions. Numerous plants for hydrogen sulphide removal operate special processes which are licensed under patents.

HANDBOOKS ON PETROLEUM INDUSTRY

I am desirous of knowing who is the author of an up to date handbook on petroleum. It must be comprehensive enough to be used in reference. For example, the description of viscosity, boiling point, flashpoint, the porosity of oil sand and the leasing of oil lands.—S. R. P.

The books American Petroleum Industry, by Bacon and Hamor, publishers McGraw-Hill Book Co., and Handbook of the Petroleum Industry, by D. T. Day, publishers John Wiley & Sons, both of New York City, may contain the information you desire.

Methods for testing may be found in Bureau of Mines Technical Paper 323B, and Reports of Committee D-2, American Society for Testing Materials.

ANALYSES OF WHITE OIL, MEDICINAL MINERAL OIL

I wish to obtain representative analyses of white oil, or medicinal mineral oil, showing flash and pourpoints, with viscosity and all other details that indicate purity?—H. E. B.

There are two recognized grades of white oil; technical and medicinal. The medicinal grade must meet the specifications of the U. S. Pharmacopoeia, which is the adopted standard under the Food and Drugs Act.

The various uses in the arts for this oil were mentioned on this page in the issue of October 30. The commercial analyses follow:

Grade—	Gravity Sp. gr.	A.P.I.	Viscosity Saybolt Flash °F	@ 100°F.	Pour °F.	Color, etc.
Technical	0.865	32	320	80	—58	White; odor and taste negative.
Technical	0.870	31	320	80	—58	Slight color, odor and taste.
Medicinal	0.866	31.8	...	84	—40	Colorless; odor, taste, acid, alkali, sulphur, negative.
Medicinal	0.889	27.6	...	333	— 8	Negative color, odor, taste, acid, alkali, sulphur.

VISCOSITY INDEX AND VISCOSITY RATIO

What is the meaning of viscosity index or viscosity ratio? Can you give me a reference to where this is explained and how it is used?—C. L. E.

Viscosity index and viscosity ratio are not synonymous; while they both relate to viscosity each term involves a different kind of method to evaluate the property of viscosity as influenced by temperature.

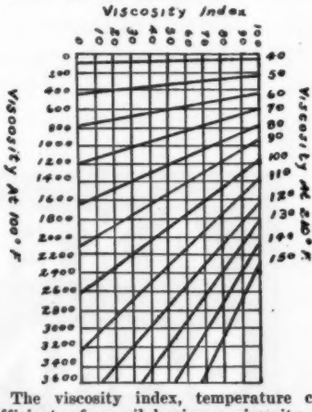
The viscosity index, as proposed by Dean and Davis in Chem. Met. Eng., 618, 36, 1929, is a viscosity temperature coefficient derived from Saybolt universal viscosities at 100° and 210° F. The viscosity indexes of the lubricating fractions from any given crude are approximately constant. The fundamental data were obtained from determinations of the viscosities of two series of oils, one (L) having a large viscosity coefficient and the other series (H) having a small one.

The general relationship between viscosities at 100° and 210° for each series was found to be represented by

$$Y = a + bx + cx^2,$$

in which Y equals viscosity at 100° F., and x the viscosity at 210° F. The constants a, b, c, are characteristic of the series of oils tested. Calculated and determined viscosities were compared by the authors for both series.

The viscosity index may be calculated from $V.I. = \frac{L - U}{L - H} \times 100$, where V.I. is the viscosity index; U the viscosity at 100°; L and H the L and H viscosities at 100° of the two series of oils having the same viscosity at 210° as the oil in question. The convenient form of the equation is $V.I. = \frac{L - U}{D} \times 100$, in which $D = L - H$. The values of D are tabulated in the reference article.



The viscosity index, temperature coefficient, of an oil having a viscosity of 60 at 210° F. and 600 at 100° is 51. The authors have designed a chart for estimating viscosity index. For the example, follow the line from 60 at 210° until it crosses the line from 600 at 100°, then follow the line to the viscosity index, about 51, at the top of the chart.

A brief description of viscosity ratio may be obtained from U.S. Army Specification No. 3,556. This specification, covering lubricating oil for aircraft, details the viscosity requirements for three grades of oil, Nos. 77, 98 and 120. These numbers correspond with the Saybolt viscosity at 210° F. It is required that the viscosity ratio of the 77 oil at 100° shall not be more than 10 times the viscosity at 210°, that of the 98 oil at 100° not more than 12 times the viscosity at 210°, and the 120 oil at 100° not more than 14.5 times the viscosity at 210°.

The viscosity is determined at 210° F., then this when multiplied by the factor given will indicate the maximum allowable viscosity at 100° F.

The intention is that an oil suitable for aircraft use at low temperatures will be obtained. The pumpability of a lubricating oil at low temperatures is asserted to be a function that is dependent on a small ratio of the two viscosities with low pourpoint. Oils of low viscosity ratio and high pourpoint or oils of high viscosity ratio and low pourpoint are alike unsatisfactory for low temperature operation. The pourpoint, as determined by the A.S.T.M. test method, does not appear to be so reliable for predicting pumpability of a lubricating oil at low temperatures as the viscosity ratio.

BURNING OF NATURAL GAS FOR HEATING

I have a heating stove burning natural gas which gives off a stinging vapor. Can you tell me what this is and how to stop it?—C. F. J.

When burning any gas there should be as near as possible the maximum quantity of air present. The air is introduced into the gas in two ways; the first is what is known as primary air that is admitted into the gas before it reaches the burning area, and the second is called the secondary air because it is drawn into the flame to complete the combustion. If either supply is short of that required incomplete combustion will result. There are two forms of flames used in gas heaters; one, not so common, burns with a luminous or yellow flame, the other, quite widely used, is nonluminous or blue. No primary air is introduced into the first and the combustion must be completed by means of the air that is surrounding the burner. The second is considered the better because the burner is arranged to take in a large quantity of air before the mixture reaches the ports and comparatively little air is required from the atmosphere about the flame.

Incomplete combustion may be indicated by the formation of fumes that cause smarting of the eyes and irritation to the throat. The chief causes are a too rapid flow of the gas, improper adjustment of the air supply, and cooling of the flame. All gas heaters should be connected with a flue and if this is impossible then proper ventilation should be provided. When irritating odors are produced there may be a more dangerous condition, that is the formation of carbon monoxide, an exceedingly dangerous poison.

Complete combustion of natural gas produces carbon dioxide and water, but when the quantity of air is not sufficient to burn all of the carbon to carbon dioxide some carbon monoxide is formed. It is odorless, cannot be detected by the sense of taste, and is colorless. So small a quantity as 0.15 per cent is considered to be dangerous to life and it acts so rapidly that there is no warning of its presence before the person affected collapses.

Any one or all of the causes for incomplete combustion may contribute carbon monoxide. It is usually the practice of the gas companies to furnish an expert who will make any necessary adjustment of the appliances without charge. If such service is not available it would be advisable to consult someone near at hand who is familiar with combustion conditions.

IT takes *courage* to be first—and *ability* to stay there. KEYSTONE was the *first copper alloy steel to be produced.* It gives maximum rust-resistance for tanks and sheet metal work in the oil fields.

KEYSTONE COPPER STEEL

IS UNEXCELLED

For Tanks, Barrels and Drums

AND FOR ROOFING AND SIDING

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Manufactured by

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GENERAL OFFICES: Frick Building, PITTSBURGH, PA.

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Pomona Turbine Pumps are made in all sizes from 15 to 5,000 g.p.m. Single lifts as great as 850 feet.

Paradoxically speaking....

CONVENTIONAL PUMPS
with a difference!

Pomona Turbine Pumps are quite conventional in that they embody the approved elements of design found best suited to turbine construction — yet how *distinctly different* they are.

Pomona dared to depart from precedent by adopting progressive engineering practice and *exclusive* refinements. Pomona is widely credited with the dominant influence that has set turbine pump construction far ahead. Within a brief span of time Pomona has advanced to *first* in turbine pump sales. Features noted below have contributed to this success.

. . . . *for instance,* improved lubrication method, non-corrosive stainless steel pump shaft, adjustable pump capacity to correspond to varying water levels, Goodrich Cutless bearings, unidrive built-in Westinghouse motor application, convertible heads, minimum attention, high efficiency over wide range, elimination of oil and grease below the surface. Ask for Bulletin.

Pomona Pump Co., Pomona, Calif.

Distributors

U. S. Wind Engine & Pump Co.
11th & Hickory Sts., Kansas City, Mo.

Menge Pump & Machinery Co.
862 Tchoupitoulas St., New Orleans, La.

The Shuler Company
717 W. Noble, Oklahoma City, Okla.

Southern Engine & Pump Company
615 Washington Ave., Houston, Texas.

POMONA TURBINE PUMPS

ECONOMIES OF MOTOR TRANSPORT IN DISTRIBUTION OF PRODUCTS

By A. F. Coleman
Standard Oil Co. of New York*

Twenty years ago motor trucks were only a dream. Petroleum products were moved from place to place by water, rail, and horse-drawn vehicles — sleighs in many instances. Modern motor transportation has enabled us to make deliveries in approximately one-twelfth the time possible with horse-drawn vehicles.

Many relay bulk stations accordingly have been discontinued, with a considerable saving in plant investment and upkeep. Labor and investment in the stocks of the various and increasing number of products that require distribution have been reduced.

Supervision of motor truck operation—covering a knowledge of mechanical construction and performance under varying conditions of roads, grades, loads, seasonal changes, ordinances, and marketing problems—has been the guiding hand coordinating the details of marketing and transportation problems—with economy as the ultimate goal.

We who supervise owe much of our success to the progress made by the manufacturers of trucks, bodies, and tanks, and to the splendid co-operation they have given us in solving our transportation problems.

Transportation Economy

Service, without regard to cost, was one of the features which aided materially in building Standard Oil Company predominance in the early days. Bulk plants were placed at strategic locations; sites to handle loads were carefully selected on the water fronts. From such points, land cargoes were shifted to floating bottoms or moved inland from the coast.

Bulk plants were also located at railroad sidings, close to populous districts and near the refineries. Sub-stations or relay points were grouped about the main plants, at distances from 5 to 10 miles, it being necessary to plan operations in terms of horse-drawn vehicles, thereby limiting operations to about 15 miles per day. The automobile at that time was only a prediction.

The practice in the small sub-stations was to place one man in charge. He was manager, tank wagon driver, chief clerk, collector, stableman, stock clerk, and odd job man. He handled everything, and became the Standard Oil Company in his little community. He was a loyal and faithful employe, a hard worker, and a good citizen.

Appearance of the Automobile

Time worked great changes in the industry. The automobile, introduced about the end of the nineteenth century, opened a market for gasoline, which had earlier been a by-product of the refineries. Lubricating oil available at that time was not satisfactory for the gas engine. A new type lubricant had to be refined to withstand the higher operating temperatures of the internal combustion engine, which meant that greater stocks had to be carried at our plants. Garages in cities soon spread to the country districts; filling stations appeared at crossroads; passenger cars came into favor and grew in number; roads were improved, and changed in character to carry heavier loads—but the horse lingered on in the delivery field, motor trucks at this early date being considered an expensive luxury.

The additional business, the increased radius over which business must be done, made motor transportation inevitable. Eventually motor trucks began to find their way into the field—generally into the hands of the old tank wagon drivers who acted as our first chauffeurs and supervisors. These old trucks, the first recruits, the vanguard of our present fleets, were an odd lot of machinery, poorly engineered when compared to our present equipment. The tanks and special equipment which were mounted on them were necessarily make-shifts, because there was no experience on which to base vehicle design. As crude as they now seem, they carried on and earned a place in the Hall of Fame, where Mr. Ford now proposes to perpetuate them.

Trucks then could not be selected, as they are today, to meet special requirements. There was no opportunity to specify definite spring changes, tire capacities, wheel bases, or engine sizes. There were no three-axle trucks and no trailers. Operators were faced with a limited range of capacities and makes, and had little practical or technical automotive knowledge to guide their choice. The outcome was disheartening. In many companies trucks were considered a necessary evil. Owners simply buried their heads in the sand and hoped the trucks would run themselves. They wished only to forget them.

With the development of trucks and with changed marketing conditions, a different delivery system was necessary. Business both at main and at sub-stations had to keep pace with the increase in passenger cars, trucks, and buses. More man-power was needed at the one-man station. The driver was promoted to substation manager. Primarily a marketing man, his knowledge of motor trucks and equipment was not abreast of progress in the industry. Slowly owners and directors were becoming "truck conscious." One by one they removed their heads from the sand, and began to realize that trucks could be an asset, instead of a liability, if adapted to the job and correctly handled and supervised.

Supervision

This sub-heading refers only to knowledge of mechanics of the truck; construction features which govern its capacity; performance on the road, on grades, on different types of road surfaces; performance under varying seasonal conditions; acceleration and deceleration ability; turning radius; fuel and oil economy. In addition, the vehicle must meet these conditions as one unit that will properly perform under any operating requirements and conform to the many local and state ordinances.

Trucking problems soon became tied up with marketing problems. Where a day's work for a horse was 15 miles, a truck would operate over a radius of 40 to 45 miles; later the hauls became even longer.

Nevertheless, in the beginning we used horses for local deliveries; but with experience the truck forced the horse more and more out of the picture. Consolidation at stations resulted; many of our old plants were dismantled, and their business distributed among more distant plants.

With faster vehicles, operating on pneumatic tires, deliveries were again expedited. Today there is still further consolidation and more refined study of our marketing conditions.

Each Route Must Be Surveyed

Changes in our plan of operations were comparatively simple at the beginning, as we had relatively high delivery figures on which to base new economies. But as new installations of equipment reduced our delivery costs, our problem became more difficult, so that at present it is necessary to make a thorough survey of each new proposed route. A detailed survey furnishes a complete description of the type and character of the road surfaces, capacity of any bridge which must be crossed, radius of any short curves, and other necessary information.

Knowing the potential gallonage which must be moved over the road and the length of the haul, it becomes a simple problem to determine the numbers and sizes of trucks required to move the product. The size of truck is of necessity limited by road conditions, capacity of bridges, or by legislation.

From a marketing viewpoint, we are also confronted with limitations, depending on the product hauled and the nature of the deliveries along the route.

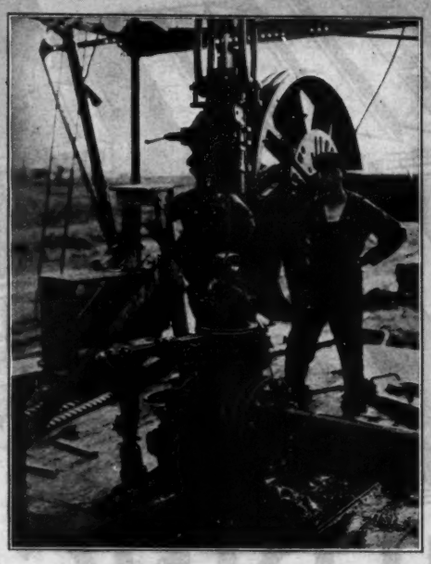
These limiting and controlling factors

*Presented at Eleventh Annual Meeting, American Petroleum Institute, at Chicago, Ill., November 13, 1930.

For Running Tools Under Pressure with Complete Control

ALL-PURPOSE and TYPE X Control Head equipment are in use at Lovell, Big Lake, Yates Pool, Graham, Chandler, Oklahoma City, etc., for "lubricating" tools under pressure - - - with complete control at all times. TYPE X is used for nominal pressures and ALL-PURPOSE equipment for high pressures.

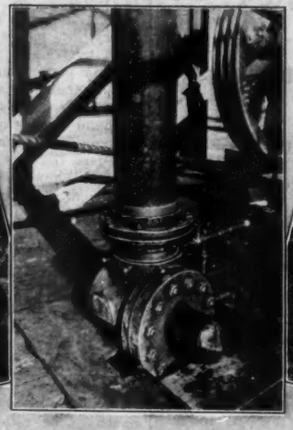
THE OIL WELL IMPROVEMENTS CO.
Tulsa, Okla.



ALL-PURPOSE Control Head and All-Purpose Oil Saver on Oklahoma City well - - - - Tools in hole and drilling

Type "X" Control Head on Oklahoma City well. Tools drilling.

Lubricating Chamber in position with pressure by-passed to chamber preparatory to pulling out.



Tools out. Control Head closed and lubricating chamber detached.

O.W.I. Co. All-Purpose and Type "X" CONTROL HEADS

BUILDINGS By TRUSCON

In all Types and Sizes

NEW WALLS, NEW WINDOWS, NEW ROOFS, NEW DOORS give greater utility, flexibility, and quality to Truscon Buildings. Low initial cost added to these features insures the greatest possible value obtainable in a building investment.

Truscon cooperates fully with architects, contractors, builders and owners to develop the most satisfactory building for individual requirements.

Whatever the size or type of your building, write, without obligation, for our recommendations, quotations and catalog.

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Send without obligation full information on buildings to be used for_____approximate floor space_____sq. ft. No. of stories high_____ Length_____ft. Width_____ft. Height_____ft.

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must be decided. The truck manufacturers are then asked to furnish a chassis capable of a definite performance on the grades and roads, and different speeds. This removes much of the guess work which characterized earlier operating methods, and makes it possible scientifically to predict results within a narrow range of error. Reviewing our costs after these similar revisions have been made, we find that the apparent actual cost of transportation of 100 gallons of gasoline from a central point to one of the more distant stations has not diminished perceptibly in cost per gallon, due to the much larger radius over which deliveries are now made. But even though the actual cost itself is not perceptibly less, there is a considerable saving to the company, due to decreased real estate investment and the elimination of such items as maintenance of plant and plant equipment, labor and additional tankage for products, and particularly due to the saving in investment represented by large stocks of products in storage at these small plants.

It was sometimes necessary, in order to take advantage of carload freight rate, to store a year's supply of a particular product at one of these relay stations.

Operation Costs Reduced

With modern equipment and proper routing of trucks, the operating expenses can be reduced.

In a section of the New York City metropolitan area we made a sweeping change in our method of delivery. Conversion from old solid-tire trucks to the high-speed pneumatics made it possible during the period from January 1, 1930, to June 30, 1930, to reduce the number of trucks 36 per cent, and at the same time to increase the gallons hauled 53 per cent.

A cost analysis of this change does not reflect a saving in cost-per-gallon delivery that one would expect, due to much longer delivery routes. The change, however, made possible elimination of a number of small sub-stations and a consequent saving.

Having before them the savings which have been effected by the introduction of trucks into our delivery service, our distribution department figured, with the assistance of the automotive department, that gasoline—for short hauls up to approximately 50 miles—could be transported, in large bulk or for wholesale delivery, by motor truck at a lower cost than by freight.

This paper has been confined strictly to the transportation of petroleum products. No single paper could comprehend the whole subject matter of economies in automotive transportation. We feel that we have demonstrated sufficiently how modern equipment can be managed, scientifically and economically, at the same time insuring the all-important sales factory service to customers—our first consideration now, as at the outset.

CANADIAN FIELDS

(Continued from Page 70)

ter, is reincorporating under Canadian federal charter with office at Vancouver, British Columbia. A branch office will probably be established in Alberta. The present Atlantic-Keystone Petroleum Co. represents a merger of a large number of Canadian and American oil interests. Companies merged at that time included Teapot Dome Oils, with its subsidiaries, Wyalta Oils and Roberta Oils; Baldwin Oils, Cameron Petroleums, Calput Petroleums, Alcazar Petroleum Co., Mogul Oils, Strand Petroleums and Canadian Natural Resources.

The company's drilling program is started to contemplate operations that will ultimately involve an expenditure of $1,250,000 in Alberta. It holds acreage in Arkansas, Wyoming, Oklahoma, Texas, Louisiana and New Mexico, leases and royalties aggregating around 150,000 acres; in addition to its extensive Canadian acreage; and it is stated to have 10 producing wells in the Irma Field, Arkansas, and several wells in Wyoming.

The president is Col. Frank Wilbur Smith, former assistant postmaster general; and other directors include George W. Tinsley of Philadelphia; Prince Blucher of Silesia, Germany; Lord Anally and Willard E. Hall, London, England; Robert McKee, Col. W. W. Foster, Vancouver, British Columbia; Hon W. E. Foster, St. John, New Brunswick; F. A. Sproule, Ottawa; Thomas A. Collins, Los Angeles; and J. W. Heffernan, Edmonton. Frank L. Buckley is vice president and managing director.

Drilling operations on the company's Alberta acreage will commence in May, 1931. The first drilling will be on acreage formerly held by Baldwin Oils, Ltd., in the Kinsella gas field, in east central Alberta; and it is understood contract has been made for sale of the potential gas production. The company holds 10,400 acres in this area. The company's Alberta holdings include acreage on the Turner Valley, Red Coulee, Spring Coulee, Milk River, Blood Reserve, Highwood, Ghost River, Sarcee Reserve, Jumping Pound and Herron structures On the Ghost River structure it has a test in LSD 1, Section 19-27-6w5, standing at 2,961 feet. The immediate development program also includes core drilling tests on the Spring Coulee and Blood Reserve structures.

Operations will be continued on the American acreage. It is stated that Wyalta Oil Co., a subsidiary, has completed five wells east of Teapot Dome in Wyoming and has also taken over some Spindletop production from G. W. Jarvis and Kenneth McDonald. Interests associated with the company are also reported to have optioned a pipe line from Bolton Creek to serve as an outlet for the Spindletop production.

Farewell Dinner to Robert S. Ellison By Casper Citizens

CASPER, Wyo., Nov. 15.—One of the finest tributes the city of Casper has ever paid to one of the men responsible for her successful growth was paid to Robert S. Ellison, retiring vice president and general manager of the Midwest Refining Co. The members of the Casper Chamber of Commerce were hosts to Mr. and Mrs. Ellison at a dinner and reception attended by 120 persons at the Townsend Hotel.

Charles Niethammer, the new president of the Casper Chamber of Commerce, presided as toastmaster for the evening, and introduced Former Governor B. B. Brooks, W. F. Wilkerson, Attorney Harry B. Durham, and others who spoke in deep appreciation of their friendship with Mr. Ellison and told of his various influential activities in the affairs of the city and the State.

As the evening was brought to a close Mr. and Mrs. Ellison were presented with many gifts. They included beautiful silver pieces, and handsome camp equipment.

The Ellisons have left Casper for their new home in Tulsa where Mr. Ellison has assumed his duties as president and general manager of the new Stanolind Crude Oil Purchasing Co. Before leaving for Tulsa Mr. Ellison visited the Salt Creek Field where employes of the company gave a dinner for him, and reiterated the farewell and very best wishes which his host of Casper friends had already expressed.

DRILLING IN NEW ZEALAND

Though much money has been expended in the search for oil in New Zealand without valuable result so far, drillers continue to show a conviction that the oil is present in commercial quantities, and five companies steadily continue drilling. Four commenced work in March and the other in April, and total drilling has come to 7,528 feet. A recent offer of additional shares by the Blenheim Co. was well oversubscribed. A first showing of oil occurred in the Moturoa Oil Fields Co.'s wells in August, and experts consider it indicates the probability of a better flow.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 61)

Empire G. & F. Co.'s No. 1 McCullogh, 1,320 ft. S, 886 ft. W, Sec. 153, Blk. 3, I.&G.N. Sur. ....Drlg. 455 ft.

Danciger O. & R. Co.'s No. 1 Sullivan, 231 ft. N, 224 ft. W, of E 160 ac. of S 264 ac., N½, Sec. 136, Blk. 3, H.&G.N. Sur. ....Drlg. 1,840 ft.

Danciger O. & R. Co.'s No. 2 Sullivan, 231 ft. N, 884 ft. W, of E 160 ac. of S 264 ac., N½, Sec. 136, Blk. 3, H.&G.N. Sur. ....Drlg. 1,735 ft.

Dulaney & Word's No. 1 Morse, 330 ft. S and W, Sec. 18, Blk. A-9, H.&G.N. Sur. .... Drlg. 2,110 ft.

Empire G. & F. Co.'s No. 2-B Archer, 330 ft. S and E, SW, Sec. 139, Blk. 3, I.&G.N. Sur. ....T.D. 3,240 ft; shot 120 qts. from 3,175-3,210 ft; C.O.

Empire G. & F. Co.'s No. 1 Bell, 1,320 ft. S, 1,660 ft. E, SW, Sec. 111, Blk. 3, I.&G.N. Sur. ....Drlg. 1,475 ft.

Empire G. & F. Co.'s No. 1 Cantrell, 330 ft. S and E, Sec. 136, Blk. 3, I.&G.N. Sur. ....Drlg. 2,560 ft.

Empire G. & F. Co.'s No. 1 Froshier, 1,320 ft. S and E, Sec. 177, Blk. 3, I.&G.N. Sur. .... Drlg. 2,110 ft.

Empire G. & F. Co.'s No. 1 Sullivan, 330 ft. NW of E 64 ac. of W 104 ac. of S 264 ac., N½, Sec. 136, Blk. 3, I.&G.N. Sur. ....1,000,000 ft. gas 2,775 ft; fishing 3,068 ft.

Empire G. & F. Co.'s No. 2 Sailor, 330 ft. N and W, NE, Sec. 138, Blk. 3, I.&G.N. Sur. ....T.D. 3,240 ft; T.P. 3,185 ft; C.O.

Jean Pet. Co.'s No. 1 Furneaux Bros., 330 ft. N and W, cor. SE, Sec. 200, Blk. B-3, H.&G.N. Sur. ....S.D. 2,765 ft.

Magnolia Pet. Co.'s No. 1 Latham, 876 ft. N, 150 ft. E. Sec. 153, Blk. 3, I.&G.N. Sur. ....Drlg. 2,730 ft; 9,000,000 ft. gas 2,705 ft.

Magnolia Pet. Co.'s No. 2 Heitholt, 150 ft. S, 1,156 ft. W, SE, Sec. 152, Blk. 3, I.&G.N. Sur. .... Rig.

Magnolia Pet. Co.'s No. 2 Latham, 175 ft. N, 150 ft. E. Sec. 153, Blk. 3, I.&G.N. Sur. ....Drlg. 2,295 ft.

Magnolia Pet. Co.'s No. 1 Morse, 330 ft. N and W, S½ NE, Sec. 5, Blk. 26, H.&G.N. Sur. .... Bldg. rig.

Magnolia Pet. Co.'s No. 2 Sailor, 330 ft. S and W, E½ NE, Sec. 138, Blk. 3, I.&G.N. Sur. .... Bldg. rig.

Midwest Expltn. Co.'s No. 1-B Taylor, 660 ft. N and W, Sec. 7, Blk. H, A. W. Willard Sur. .... Standardizing 2,454 ft.

Midgray Oil Co.'s No. 1 McCullough, 267 ft. N, 150 ft. E of 246.9 ac. in Sec. 153, Blk. 3, I.&G.N. Sur. .....Drlg. 2,065 ft.

Nelson et al's No. 1 Crews, 330 ft. S and E, NW, Sec. 12, Blk. 25, H.&G.N. Sur. ....Fishing for bit; T.D. 2,620 ft.

North American O. & G. Co.'s No. 1 Duncan, 310 ft. N, 660 ft. E, E½ SW, Sec. 135, Blk. 3, I.&G.N. Sur. ... Drlg. 1,965 ft.

North American O. & G. Co.'s No. 1 Sullivan, 1,320 ft. S and E, Sec. 160, Blk. 3, I.&G.N. Sur. ....Cellar.

Phillips Pet. Co.'s No. 1 Barrett, 330 ft. S, 150 ft. W, W½, N 56 ac., Sec. 1,360, Blk. 3, I.&G.N. Sur. .....Standardizing 2,409 ft.

Phillips Pet. Co.'s No. 2 Barrett, 130 ft. N, 465 ft. W, Sec. 136, Blk. 3, I.&G.N. Sur. ....Drlg. 1,980 ft.

Prairie O. & G. Co.'s No. 1 Reynolds, 330 ft. S and E, NW, Sec. 84, Blk. 3, I.&G.N. Sur. ....Estimated 1,900,000 ft. gas 2,590-2,920 ft; set 6-in. csg. 3,010 ft.

W. A. Scott's No. 1 Cobb, 330 ft. S, 425 ft. W, N½ SE, Sec. 134, Blk. 3, I.&G.N. Sur. .... Estimated 4,000,000 ft. gas 2,875 ft; drlg. 3,015 ft.

Shamrock O. & G. Co.'s No. 1 Reynolds, 330 ft. N and E, SE SE, Sec. 84, Blk. 3, I.&G.N. Sur. ....S.O. 2,905 ft. and 2,994 ft; drlg. 3,128 ft.

Skelly Oil Co.'s No. 1 Heitholt, 150 ft. N, 3,806 ft. W, Sec. 153, Blk. 3, I.&G.N. Sur. .... Drlg. 2,865 ft; 9,000,000 ft. gas 2,606-2,865 ft.

Smith's No. 1 Morse, 200 ft. S, 330 ft. W, Sec. 6, Blk. 26, H.&G.N. Sur. ....3,000,000 ft. gas 2,150-70 ft; S.D. 2,892 ft; 400 ft. oil in hole.

Southern Expltn. Co.'s No. 1 Baird, 330 ft. S and W, NW, Sec. 127, Blk. 3, I.&G.N. Sur. ....T.D. 3,271 ft; T.P. 3,158 ...; 1,800 ft. oil in hole; to set 6-in. csg.

Southern States Gas Co.'s No. 1 Case, 330 ft. N and W, E½, Sec. 181, Blk. B-2, H.&G.N. Sur. .... Cellar.

Sullivan & Ochiltree's No. 1-A Morse, 330 ft. S and W, N¼ NE, Sec. 15, Blk. A-9, H.&G.N. Sur. .... Rig.

The Texas Co.'s No. 3 Brown, 150 ft. S, 330 ft. W of 247-ac. lease, Sec. 137, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,580 ft.

Warner Oil Co.'s No. 1 Morse, 330 ft. S and W, N½ NW, Sec. 68, Blk. 25, H.&G.N. Sur. .... Cellar.

HUTCHINSON COUNTY

Dixon Creek Oil Co.'s No. 1 Johnson Bros. 330 ft. N and W of E 60 ac. of NW 100 ac., Sec. 1, Blk. X03, H.&O.B. Sur. ....Drlg. 2,640 ft.

Great Plains O. & G. Co.'s No. 1 Sanford, C of S 160 ac. of N 320 ac., Sec. 87, Blk. 46, H.&T.C. Sur. ..... S.D. 2,750 ft.

Huber Prod. Co.'s No. 1 Johnson Bros., 330 ft. N and E, E½ NW, Sec. 30, Blk. Y, A.&B. Sur. .... S.D. 2,800 ft.

Huber Prod. Co.'s No. 1 Johnson Bros. (Pure), 330 ft. S and E of E 240 ac., Sec. 29, Blk. Y, A.&B. Sur. ..T.D. 3,052 ft; C.O. after shot.

Huber Prod. Co.'s No. 1 Johnson Bros. (Premier), 330 ft. N and E, of W 60 ac., N 80 ac., NW, Sec. 3, Blk. Y, A.&B. Sur. .... Rotary rig.

Liner Drlg. Co.'s No. 1-D Johnson Bros., 330 ft. N and E, W½ SW, Sec. 6, Blk. 1, B.&B. Sur. .... Rotary rig.

Texas Interstate P. L. Co.'s No. 1 Bivins, C E½ of N 160 ac., Sec. 91, Blk. 6, H.&T.C. Sur. .... Spudded.

Lanier et al's No. 1 Johnson Bros., 990 ft. S, 330 ft. E, W½ SE, Sec. 29, Blk. Y, A.&B. Sur. .... Spudded.

Prairie O. & G. Co.'s No. 1 Read, C SW, J. M. McDonald Sur. .... Drlg. 3,115 ft.

Sinclair O. & G. Co.'s No. 1-C Johnson Bros., 330 ft. N and W, NE, Sec. 32, Blk. Y, A.&B. Sur. .... Drlg. 3,060 ft.

Sinclair O. & G. Co.'s No. 1-A Johnson Bros., 330 ft. N, 430 ft. E, NW, Sec. 32, Blk. Y, A.&B. Sur. .... Drlg. 1,210 ft.

Skelly Oil Co.'s No. 1 Johnson Bros., 660 ft. S and W, SE, Sec. 30, Blk. Y, A.&B. Sur. ....S.O. 3,065 ft. and 3,108-10 ft; S.D. 3,110 ft.

Spurlock et al's No. 1-A Christian, 440 ft. S, 330 ft. W, NE cor. SE SE, Sec. 33, Blk. Y .... 60,000,000 ft. gas; S.D. 3,219 ft.

Stansylvanian Oil Co.'s No. 1 Whittenburg, 330 ft. S and W, Sec. 139, Blk. Z, E.L.R.R. Sur. ....S.D. 3,075 ft.

LIPSCOMB COUNTY

Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW. Sec. 100, H.&T.C. Sur. ....Lowering 5 3/16-in. csg; T.D. 5,003 ft.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch .... Small S.O. 1,133-40 ft; S.D. 4,167 ft.

MOORE COUNTY

Dana O. & G. Co.'s No. 1 R. Utey, 330 ft. N, 330 ft. E, W½ SE, Sec. 135, T.&N.O. Sur. ....Rig on ground.

Delmar Oil Co.'s No. 1-A Jones, 380 ft. N, 990 ft. E, NW, Sec. 171, Blk. 3-T, T.&N.O. Sur. ....S.D. 3,125 ft; estimated 100,000,000 ft. gas 3,090 ft.

Gulf Prod. Co.'s No. 1 Dare, C SE, Sec. 312, Blk. 44, H.&T.C. Sur. .... Bldg. rotary rig.

Home Gas Co.'s No. 1 Reeder, 330 ft. N and W, N½ E½, Sec. 191, Blk. 3-T, T.&N.O. Sur. ....25,000,000 ft. gas 3,139-3,200 ft; S.D. 3,473 ft.

Morton et al's No. 1 Rupert, 660 ft. N, 330 ft. E, NW, Sec. 191, Blk. 3-T, T.&N.O. Sur. .... Cellar.

Shamrock O. & G. Co.'s No. 1 Sullivan, 330 ft. S and E, NE, Sec. 139, Blk. 3-T, T.&N.O. Sur. ....Drlg. 410 ft.

Sunray Oil Co.'s No. 1 C. R. Jones, 330 ft. E, 330 ft. S, W½ SW, Sec. 144, T.&N.O. Sur. ....T.D. 3,075 ft; to kill 101,000,000 ft. gas to deepen.

Sunray Oil Co.'s No. 2 Jones, 330 ft. S, 990 ft. E, W½ SW, Sec. 164, Blk. 3-T, T.&N.O. Sur. ....Rig on ground.

Texas Interstate P. L. Co.'s No. 1 Sneed, Jr., C NE, Sec. 6, Blk. B-10, E.L.&R.R. Sur. ....Drlg. 1,690 ft.

MOTLEY COUNTY

Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G, B.&B. Sur. ....S.D. 530 ft.

OLDHAM COUNTY

Amalgamated German-American Oil Corp.'s No. 1 Norton, 330 ft. S and E, Sec. 12, T.&N.O. Sur. ....Rotary rig.

Chambers et al's No. 1 Herring, CNL, Sec. 29, Blk. 3, G.C.&S.F. Sur. ....S.D. 680 ft.

POTTER COUNTY

Texas Interstate P. L. Co.'s No. 1 Rockwell, C N½ S½, Sec. 102, Blk. 46, H.&T.C. Sur. .... Rig.

RANDALL COUNTY

W. A. Patterson's No. 1 Palo Duro, Sec. 60, Blk. K-14 ..S.D. 1,250 ft.

WHEELER COUNTY

Devore & Robinson's No. 1 Kelley, 2,310 ft. S and E, Sec. 33, Blk. A-4, H.&G.N. Sur. .... Location.

Guernsey Oil Co. et al's No. 1 Sewell, 320 ft. N and E, Sec. 38, Blk. 13, H.&G.N. Sur. ....Drlg. 1,875 ft.

McGee et al's No. 1 Jolly, C NE, Sec. 15, Blk. A-8, H. &G.N. Sur. ....Drlg. 2,300 ft.

Mid-Kansas O. & G. Co.'s No. 1 Harvey, 660 ft. S and W, NE, Sec. 56, Blk. 23, H.&G.N. Sur. ....S.D. 1,460 ft; 5,000,000 ft. gas 1,460 ft.

Wischkamper et al's No. 1 Kiser, 330 ft. N and E, SW, Sec. 33, Blk. 17, H.&G.N. Sur. ....S.D. 2,402 ft.

Woodley et al's No. 1 Sloss & Admire, 660 ft. N, 330 ft. E, Sec. 47, Blk. 13, H.&G.N. Sur. ....Drlg. 1,750 ft.

Vollmert's No. 1 Porter, 330 ft. S and E, NE, Sec. 15, Blk. 27, H.&G.N. Sur. ....S.D.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 60)

H. F. Wurtz' No. 1 E. A. Ibbetson et al, 330 ft. from N and E lines of NW, Sec. 16, Blk. 46, Twp. 3s, G. M. M.Br.&A. Sur. ....Fishing 3,250 ft.

Skelly Oil Co. and Republic Prod. Co.'s No. 1 McKenzie, 990 ft. from S line and 330 ft. from E line of Sec. 28, Blk. 45, Twp. 2s, T.&P. Sur. ....Shut down 3,750 ft.; flowed 110 bbls. on July 12, shut in for storage.

Southern Crude Oil Pur. Co.'s No. 2 Cowder & Co., 660 ft. from S and W of NE cor. Sec. 34, Blk. 43, Twp. 1n, T.P. Sur. ....Building rig.

The Texas Company's No. 9 Connell, 330 ft. from N and 440 ft. from W of SE cor. Sec. 1, Public School Land ..Shut down 3,632 ft.; will shoot.

EL PASO COUNTY

Lane-The Texas Company's No. 1 Malone, 2,110 ft. from SW and NW of Section 46, J. M. Day Sur. ....Shut down 3,089 ft.

FISHER COUNTY

Condor Pet. Co.'s No. 1 Wilson, 330 ft. from N and 1,200 ft. from W, Sec. 6, W. E. Richardson Sur. ....Drlg. 1,550 ft.

Cranfill & Reynolds' No. 2 Flannigan, 330 ft. from S and E of W half of Section 200, B.B.B.&C. Sur. .....Shut down 3,130 ft.

Cranfill & Reynolds' No. 3 Willingham, 330 ft. from S and E of Sec. 307, B.B.B.&C. Sur. ....Shut down 3,090 ft.

The Texas Company's No. 2-A Stephens, 330 ft. from S and E, Sec. 79, Blk. 1, H.&T.C. Sur. ....Drlg. 1,691 ft.

The Texas Company's No. 1-B Teagarden, 1,990 ft. from S and 440 ft. from E, Sec. 8, W. F. Richardson Sur...Drlg. 2,125 ft.

GAINES COUNTY

Texas Consolidated Oil Co. et al's No. 1 Jones, 2,310 ft. from NE, Sec. 4, Blk. A-8, P.S.L. Sur. ....Bldg. standard rig.

GARZA COUNTY

Pandem Oil Corp.'s No. 1 Justice, 330 ft. from S and W of Sec. 12, Blk. 4, H.&G.N. Sur. ....Spudded and shut down.

GLASSCOCK COUNTY

F. H. E. Oil Co.'s No. 1 Meek, 1,650 ft. N and E parallel to section lines of SW cor. Sec. 7, Blk. 34, Twp. 3s, T.&P. Sur. ....Shut down 1,300 ft.

Timberlake & Snyder's No. 1 Meek, 2,310 ft. W and 1,600 ft. N of SE cor. Sec. 7, Blk. 34, Twp. 3s, T.&P. Sur....Total depth 2,956 ft.; shut down.

World Oil Co.'s No. 3-C McDowell, 2,310 ft. from S and W of NE cor. Sec. 21, Blk. 34, Twp. 2s, T.&P. Sur. ...Shut down 660 ft.

HOWARD COUNTY

Cosden Oil Co.'s No. 6 Roberts-A, 200 ft. N and E of SW cor. Sec. 129, Blk. 29, W.&N.W. Sur. ....Sulphur water 1,433-46 ft.; shut down 1,456 ft.

G. F. Getty's No. 1 Snyder, Sec. 27, Blk. 10, Twp. 1s, SW cor. of NE of NE .... Fishing 2,620 ft.

Greene O. & R. Co. et al's No. 1 Denman, 330 ft. from N and W of E half of NE, Sec. 14, Blk. 30, Twp. 1s, T.&P. Sur. ....Drlg. 2,805 ft.

Magnolia Pet. Co.'s No. 1 Kelley Roberts, 330 ft. S and E, Sec. 112, Blk. 29, W.&N.W. Sur. ....Bldg. standard rig.

Merriwether's No. 1 Smith, 150 ft. from S, 2,400 ft. from W, Sec. 45, Blk. 33 ....2,000 ft. water in hole; shut down 3,270 ft.; 2,000 ft. sulphur water in hole; will abandon.

Moody Oil Corp.'s No. 23-B Roberts, 990 ft. from N and W of Sec. 137, Blk. 29 ....Shut down 261 ft.

HUDSPETH COUNTY

Thelson's No. 1 University, 2,050 ft. from S and 2,225 ft. from E of Sec. 17, Blk. E .... Spudded 35 ft. and shut down.

Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW Sec. 12, Blk. 18 ....Shut down 3,155 ft.

IRION COUNTY

Bristow et al's No. 1 Nutt, 180 ft. from NW of SW of NW Sec. 6, Gonzales County School Land ....Total depth 1,735 ft.; plugged back to 1,458 ft.; preparing to put on pump.

Central Oil Co.'s No. 2 Horney, 150 ft. from N and 1,320 ft. from E, Sec. 3, Blk. 3, H.&T.C. Sur. ....Drlg. 950 ft.

Cromwell et al's No. 3 Tankersley, 150 ft. from N and 210 ft. from W of E half of Sec. 1,320, G.C.&S.F. Sur...Shut down 1,712 ft.; show oil 1,621-25 ft.

Straughn & Texannati Oil Co.'s No. 1 Tankersley, 150 ft. from S and 750 ft. from W of Sec. 4, Gonzales County School Land ....Shut down 1,331 ft.; oil sand 1,220-25 ft.; filled up 200 ft. in 12 hours.

Williams & Williams' No. 1 Noelke, 200 ft. from N and 1,020 ft. from E, Sec. 8, City of San Antonio Sur. ....Shut down 1,995 ft.

F. F. Webb's No. 1 W. H. Williams, 200 ft. from E and 750 ft. from S line, SW of NE Sec. 10, Gonzales County School Land ....Shut down 100 ft.

JONES COUNTY

McBest et al's No. 1 Roberts .... Total depth 1,000 ft.

Union Oil Co. of Nevada et al's No. 1 Hedrick, 200 ft. from N and W of 91.4-acre farm in G. Martinez Sur., Abst. 262, Sub. 5 ....Spudded.

S. C. Yingling et al's No. 1 Cade, 330 ft. from N and W from SE cor. of NW of Sec. 17, Blk. 19, T.P. Sur. ...Spudding.

LOVING COUNTY

Arkansas Fuel Oil Co.'s No. 1 Dean, 990 ft. from NE and 2,310 ft. from SE, Sec. 34, Blk. 1, W.&N.W. Sur. ....Shut down 4,341 ft.; plugged back to 4,339 ft.; top pay 4,302-34 ft.; making 1 bbl. oil per day; preparing to shoot.

Eppenauer et al's No. 1 Allen, 2,310 ft. from NE and NW lines, Sec. 90, Blk. 1, W.&N.W. Sur. ....Drlg. 3,435 ft.

Henshaw et al's No. 2 Reagan & McElwain, 1,650 ft. from SW and 990 ft. from SE, Sec. 84, Blk. 7, W.&N.W. Sur. .... Rig.

Lockhart & Co.'s No. 3 Bowen & Wells, 330 ft. from NE and SE of Sec. 92, Blk. 1, W.&N.W. Sur. ..... Shut down 3,383 ft.
Independent O. & G. Co.'s No. 2 Wheat, 990 ft. from NW and 330 ft. from SW, Sec. 85, Blk. 1, W.&N.W. Sur. .. Shut down 3,303 ft.
Lockhart & Co.'s No. 2 fee, 676 ft. S, 330 ft. W, Sec. 91, Blk. 1, W.&N.W. Sur. ..... Spudded 140 ft.; shut down.
Lockhart & Co.'s No. 3 Hubbard, 1,650 ft. from NE line, 330 ft. NW line of Sec. 83, Blk. 33, H.&T.C. Sur. ..... Rigged up and shut down.
Miller et al's No. 1 Chapman, 225 ft. from NW and 285 ft. from SW line, Sec. 71, Blk. 1, W.&N.W. Sur. ..... Shut down 4,188 ft.
Rush et al's No. 1 Wheat, 330 ft. from NW and SW, Sec. 77, Blk. 1, W.&N.W. Sur. ..... Cellar.
Siagel Drlg. Co.'s No. 1 Cartwright et al, 2,310 ft. from S and 990 ft. from W, Sec. 1, Blk. 57, Twp. 1, T.&P. Sur. ..... Spudding 30 ft.
California Co.'s No. 5 Reagan & McElvain, 990 ft. from NW and 330 ft. from NE of Sec. 84, Blk. 1, W.&N.W. Sur. ..... Fishing 2,355 ft.
California Co.'s No. 6 Reagan & McElvain, 330 ft. from SW and 1,650 ft. from SE, Sec. 94, Blk. 1, W.&N.W. Sur. ..... Set 10-inch casing 670 ft.

MENARD COUNTY

Barnett et al's No. 3 Callan City Co., 330 ft. from S and W, Sec. 1, B.S.&F. Sur. ..... Shut down 1,814½ ft.
Barnett et al's No. 4 Callan City Co., 1,200 ft. from S and 2,200 ft. from W, Sec. 1, B.S.&F. Sur. ..... Machine.
Panhandle Ref. Co.'s No. 2 Eckhart, 1,320 ft. from W and 1,320 ft. from S of Sec. 10, Blk. 2, T.W.N.G. Sur. ..... 500,000 ft. gas with show oil 2,945 ft.; shut down 3,200 ft.; to plug back to 2,955 ft. to save gas.
Priest's No. 1 Sorrell, 1,000 ft. from E and 200 ft. from S cor. Sec. 132, E.L.R.R. Sur. ..... Shut down 2,490 ft.

MIDLAND COUNTY

Kerwin et al's No. 1 Mathen, 2,310 ft. from N and 335 ft. from W line, Sec. 40, W. L. Gray Sur. ..... Shut down 2,525 ft.

MITCHELL COUNTY

Morrison et al's No. 2 Morrison, 2,390 ft. from N and 660 ft. from E of Sec. 31, Blk. 28, Twp. 1n, T.&P. Sur. ..... Shut down 3,112 ft.; top pay 3,038-75 ft.; shot 270 qts. 3,020-92 ft.; swabbed 40 bbls. in 24 hours.
Morrison et al's No. 1 Poe et al, 660 ft. S and 1,980 ft. W, parallel to section lines of NE cor. Sec. 8, Blk. 27, T.&P. Sur. ..... Spudded 10 ft. and shut down.

PECOS COUNTY

Bell et al's No. 1 Eaton, 2,310 ft. from NE and 990 ft. from SE, Sec. 33, Blk. 3, H.&T.C. Sur. ..... Location.
Bell et al's No. 1 Schaff & Blackman, 2,310 ft. NE and 330 ft. NW of E cor. Sec. 37, Blk. 3, H.&T.C. Sur., but located in Sec. 38, Blk. 3, H.&T.C. Sur. ..... Drlg. 1,235 ft.
Dittman's No. 1 Jackson, 2,310 ft. from NE and 330 ft. from NW, Sec. 28, Blk. 3, H.&T.C. Sur. ..... Moving in machine.
Dittman's No. 2 Eaton, 990 ft. from SW and 330 ft. from SE, Sec. 35, Blk. 3, H.&T.C. Sur. ..... Location.
Dittman's No. 1 Eaton, 330 ft. from NE and SE, Sec. 37, Blk. 2, H.&T.C. Sur. ..... Location.
Humble Oil & Ref. Co.'s No. 1 Kokernot, 1,320 ft. from N line and 1,467 ft. from W line of Sec. 227, Blk. 10, G.H.&S.A. Sur. ..... Fishing 6,170 ft.
Humble Oil & Ref. Co.'s No. 1-B Thoman, 1,608 ft. from N and 4,062 ft. from E of Sec. 98, Blk. OW, G.C.&S.F. Sur. ..... Drlg. 3,110 ft.
Lewis & Siagel's No. 1 Bell, 330 ft. from N and W of SE Sec. 12, Blk. 30, Twp. 1s, T.&P. Sur. ..... Location.
McCurdy & Brown's No. 2 Tippett, 150 ft. from N and W of SE, Sec. 40, Blk. 194, G.C.&S.F. Sur. ..... Location.
McCarty Oil Co.'s No. 3 Gray, 700 ft. from N and 2,260 ft. from W, Sec. 591, G.C.&S.F. Sur. ..... Drlg. 525 ft.
Messenger et al's No. 1 Butz, 1,320 ft. from NW and 1,170 ft. from SW, Sec. 54, Blk. 10, H.&G.N. Sur. .... Fishing 1,105 ft.
J. R. Miller et al's No. 1 Bennett, 359 ft. W of CWL Sec. 1, Blk. 119, G.C.&S.F. Sur. ..... Shut down 1,700 ft.
J. D. O'Mara's No. 1 Bennett, Sec. 593, 1,460 ft. from S 150 ft. from E, G.C.&S.F. Sur. ..... Total depth 1,230 ft.; top pay 1,089 ft.; plugged back to 1,185 ft.; will drill deeper.
J. D. O'Mara's No. 1 Streety, S of Sec. 1, W. P. Howard Sur. ..... Shut down 2,210 ft.; fishing.
Oregon Oil Corp.'s No 3 Yates, 150 ft. from S and W of Sec. 58, Blk. 1, I.&G.N. Sur. ..... Shut down 2,440 ft.; flowing sulphur water.
Perren Oil Co.'s No. 2 Eaton, C of E of W, Sec. 27, Blk. 3, H.&T.C. Sur. ..... Fishing 1,765 ft.
Plymouth Oil Co.'s No. 1 Perry, 330 ft. from N and W. Sec. 13, Blk. 194, G.C.&S.F. Sur. ..... Total depth 1,920 ft.; top pay 1,892 ft.; flowing 25 bbls. per day.
R. W. Porpus et al's No. 1 State Land, 330 ft. S and W lines of NE, Sec. 28, Blk. OW, T.C. Sur. ..... Spudded and shut down.
Pure Oil Co.'s No. 1 Harrison, 2,310 ft. from N and 330 ft. from W of Sec. 303, Blk. 3, T.&P. Sur. ..... Drlg. 4,358 ft.
Riser & White's No. 1 Riser, 2,397 ft. from S and 997 ft. from E of Sec. 24, Blk. 12, H.&G.N. Sur. ..... Shut down 405 ft.
Side & Side's No. 1 Blackstone & Slaughter, C NW of Sec. 34, Blk. A-2, T.C. Sur. ..... Drlg. 2,705 ft.
Schilling & Slaughter's No. 1 Yates, 1,580 ft. N and 150 ft. E of NW cor. Runnels County School Land, but located in Sec. 70, Blk. 1, I.&G.N. Sur. ..... Shut down 357 ft.
Southern Crude Oil Pur. Co.'s No. 1 Scharff & Blackman, 4,550 ft. 40° E and 330 ft. N 50°W of most southerly cor. Sec. 38, Blk. 3, H.&T.C. Sur. ..... Location.
California Co. et al's No. 1 Thomas, 990 ft. from NW and SW, Sec. 31, Blk. 34, H.&T.C. Sur. ..... Location.
The Texas Company's No. 1 Wright, 660 ft. S and E of NW cor. Sec. 9, Blk. 131, T.&St.L. Sur. ..... Shut down 3,504 ft.
Warner's No. 1 Webb, 2,550 ft. from NW and 6,100 ft. from NE of Sec. 311, Abst. 756, C. McGinley Sur. .... Drlg. 2,235 ft.
Williams & Moran's No. 1 Heiner Est., 450 ft. from N and 2,490 ft. from W of Sec. 590, G.C.&S.F. Sur. ..... Drlg. 930 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 5-C University, 625 ft. from S and 900 ft. from W of Sec. 25, Blk. 9 ..... Drlg. 7,248 ft.
Slick Estate et al's No. 1 August, C SE Sec. 1,216, G.C.&S.F. Sur. ..... Shut down 500 ft.
Texon O. & L. Co.'s No. 4-B University, 1,130 ft. from N and W of Sec. 26, Blk. 9 ..... Drlg. 5,623 ft.

REEVES COUNTY

R. T. Hansford's No. 1 Williams, 150 ft. from S and W, Sec. 17, Blk. 6, H.&G.N. Sur. ..... Shut down 380 ft.
Black & Kink's No. 1 Brooks, 1,980 ft. N and 660 ft. W, Sec. 16, Blk. 50 ..... Top pay 1,820 ft.; shot 15 qts. 1,821-30 ft.; shut down 1,860 ft.
Riggs & Smith's No. 1 Lee Monroe, 2,390 ft. from NE and 330 ft. from NW line, Sec. 34, Blk. 8, H.&L.N. Sur. ..... Shut down 176 ft.
Salsbury & Gregory's No. 1 Young Bell, 1,170 ft. from N and 330 ft. from NW line, Sec. 34, Blk. 7, H.&L.N. Temporarily abandoned.
Lee O. White et al's No. 1 Fershersor, 330 ft. from N and W lines of Sec. 5, Blk. 51, Twp. 10, T.&P. Sur. .. Shut down 4,415 ft.
California Co.'s No. 1 Kloh & Rumsey, 1,650 ft. from S and E of Sec. 13, Blk. 54, Twp. 4, T.&P. Sur. ..... Cleaning out; total depth 4,246 ft.

RUNNELS COUNTY

Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,048 ft. from NW in J. Heil Sur. No. 419 ..... Fishing for bailer 1,695 ft.
George W. Boyce's No. 1 Lang, 2,310 ft. N, 6,900 ft. E Sec. 262 ..... Show oil 2,028 ft.; shut down 2,642 ft.

SCHLEICHER COUNTY

Delmar Oil Co.'s No. 1 O'Harrow, C of NW Sec. 56, Blk. 1, G.H.&S.A. Sur. ..... Fishing 5,577 ft.
Teas & Gant's No. 1 Allison, 1,320 ft. N and E of SW cor. of Sec. 37, Blk. K, G.H.&S.A. Sur. ..... Shut down 3,960 ft.
Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,362 ft. from E of Sec. 77, Blk. LL, T.C. Sur. ..... Shut down 750 ft.
Westyde et al's No. 1 Meador, 1,320 ft. from S and E of Sec. 661, G.C.&S.F. Sur. ..... Location.
George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,290 ft. from N, 1,470 ft. from W, G.H.&S.A. Sur. ..... Shut down 5,027 ft.

SCURRY COUNTY

Byrd & Harmon's No. 1 Murphy, Jr., 320 ft. from N and E of Sec. 114, Blk. 97, H.&T.C. Sur. ..... Top pay 1,750 ft.; show oil 2,812-55 ft.; shot 150 qts. 3,100-35 ft.; pumped 55 bbls. 24 hrs.; total depth 3,501 ft.
Camp Spring Oil Co.'s No. 1 Strayhorn, 330 ft. from S and 1,980 ft. from W of Sec. 154, Blk. 3, H.&G.N. Sur. ..... Shut down 875 ft.
I. D. Mimms et al's No. 1 J. J. Koonsman, Sec. 216, Blk. 2, H.&T.C. Sur. ..... Spudded and shut down.
G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. ..... Shut down 4,970 ft.
Seifert & Dibble's No. 1 T. M. Blackburn, 2,310 ft. from N and 2,310 ft. from W line of Sec. 155, Blk. 97, H.&T.C. Sur. ..... Drlg. 800 ft.
Mid-Kansas O. & G. Co.'s No. 1 Peckham, 330 ft. from S and W of R. N. Miller Sur. ..... Repairing engine 4,373 ft.

STERLING COUNTY

Beesley et al's No. 1 Foster, 2,940 ft. N and 300 ft. W of SW cor. Sec. 7, Blk. 22, H.&T.C. Sur., but in Sec. 16, Blk. 21, Twp. 4s, T.&P. Sur. ..... Shut down 515 ft.

SUTTON COUNTY

Independent Oil & Gas Co.'s No. 1 Wilson, Sec. 30, Blk. A, 1,650 ft. from N, 2,310 ft. from W. ..... Location.

TAYLOR COUNTY

Adams et al's No. 2 Lowe, 150 ft. from N and 750 ft. from W. Sec. 19, Guadalupe County School Land. ..... Est. 1,000,000 ft. gas 2,301 ft.; shut down 2,560 ft.
Eastland Oil Co. et al's No. 2 Hunter, 3,418 ft. from S and 2,174 ft. from E of William R. Ellis Sur. ..... Set 8¼-in. casing 1,950 ft.
John B. Jameson's No. 1 Webb, 1,170 ft. S and W of NE cor. Sec. 46, Lunatic Asylum Land ..... Drlg. 6,240 ft.
Hucony Oil Co. et al's No. 1 Richie, C SE Sec. 10, Blk. A, S.P. Sur. ..... Shut down 2,570 ft.
Sanger et al's No. 1 City of Abilene, 830 ft. from S and 1,400 ft. from E of Sec. 66, Blind Asylum Land. ..... Drlg. 1,350 ft.
Sanger O. & R. Co.'s No. 1 Osborn, 330 ft. from SW of SE Sec. 48, Blind Asylum Land ..... Rigged up and shut down.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M.-K.-T. Sur. ..... Shut down 2,669 ft.
Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Georgetown Ry. Sur. ..... Shut down 3,150 ft.
Milham Corp. of Texas' No. 1 R. M. Bassett et al, 150 ft. from N line and 2,640 ft. from E and W lines of Sec. 76, Blk. Y, James Bass Sur. ..... Location.
Miller Bros.' No. 1 Allison & Burke, C NW cor. Sec. 10, Blk. 176, T.&P. Sur. ..... Shut down 120 ft.
Mrs. J. B. McPhees' No. 1 Sam Belt, C Sec. 16, Blk. D-7, E. L. Sur. ..... Shut down 880 ft.; moved off machine.
Transcontinental Oil Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S, Sec. 26, Blk. 261, G.C.&S.F. ..... Drlg. out cement 4,730 ft.; total depth 5,229 ft.
Woodley & Jones' No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&N.G. Sur. ..... Shut down 640 ft.

TOM GREEN COUNTY

Belding & Dutton's No. 1 Norsworthy, 2,640 ft. from S and 587 ft. from E of John McNeese Sur. ..... Shut down 760 ft.; show oil and gas 725 ft.
Cosden Oil Co.'s No. 1 William Anson, 2,310 ft. S, 330 ft. W of NE cor. Sec. 20, Blk. 24, H.&T.C. Sur. ..... Location
Fitzgerald & Taliaferro's No. 1 Bennett, C SW Sec. 1,628, E. E. Dinger Sur. ..... Plugged back to 2,405 ft. to straighten hole; shut down 2,447 ft.
Mintex Oil Co.'s No. 1 Campbell Est., 446 ft. from S and 630 ft. from W of Sec. 180, Dist. No. 11, S.P. Sur. .. Shut down 1,835 ft.
Phillips Pet. Corp.'s No. 1 Guiden, 1,250 ft. from N and 1,583 ft. W of Sec. 77, James Webb Sur. ..... Drlg. 4,995 ft.

UPTON COUNTY

Duffey et al's No. 2 McClintic, 328 ft. N and 967 ft. E of Sec. 206, Blk. F, C.C.S.D.&R.G.N.G. Sur. ..... Drlg. 2,310 ft.
T. P. Coal & Oil Co.'s No. 1 King Ranch Oil & Lignite Co., 2,310 ft. from N and 990 ft. from W, Sec. 28, Blk. 2, M.-K.-T. Sur. ..... Rig up.
Weekly Oil Corp.'s No. 1 Shirk, 468 ft. from S and 2,317 ft. from E, Sec. 15, Blk. 3, M.-K.-T. Sur. ..... Drlg. 1,725 ft.

VAL VERDE COUNTY

Independent Operators' No. 1 Whitehead, SE SE Sec. 30, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... Shut down 5,360 ft.
O. O. Owen's No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ..... Fishing 6,780 ft.
Phantom Oil Co.'s No. 1 Ingram, 175 ft. W of E line and 300 ft. N of S line, Sec. 33, Blk. D-8, E.L. Sur. ..... Shut down 3,035 ft.
Valvert Oil Corp.'s No. 1 Bassett, C NE Sec. 47, Blk. Y. Shut down 4,009 ft.

WARD COUNTY

Alpine Oil Co.'s No. 2 Boogher, 2,200 ft. from NW and 1,800 ft. from SW lines, Sec. 11, Blk. 5, H.&T.C. Sur. .. Running 8¼-in. casing 786 ft.
Black & Massey's No. 1 Allen, 2,108 ft. from NW and 2,100 ft. from SW Sec. 11, Blk. 5, H.&T.C. Sur. ..... Location.
Empire Gas & Fuel Oil Co.'s No. 1 John Sealy estate, 330 ft. from S and 1,650 ft. W of NE cor., Section 5, Blk. F, T.&M.M. Bros. Sur. ..... Rig up.
Gulf Prod. Co.'s No. 3 Wristen Bros., 220 ft. NE of SW and 220 ft. SE of NW Sec. 18, Blk. 5, H.&T.C. Sur. .. Show gas 1,960-70 ft.; filling up with sulphur water 2,520-77 ft.; salt water 2,545 ft.; plugged back to 2,477 ft.
Kugle et al's No. 1 Wallace, 330 ft. from SE and 1,263 ft. from SW Sec. 19, Blk. 34, H.&T.C. Sur. ..... Location.
Magnolia Pet. Co.'s No. 1 Sealy, 330 ft. from S and E of NE cor. Sec. 46, Blk. 2, G.M.M.B.&A. Sur. ..... Drlg. 3,056 ft.; shot 30 qts. 3,035-44 ft.; has swabbed 10 bbls. per day since shot.
R. F. Owens' No. 1 Johnson, 100 ft. from NE and 1,100 ft. from SE of Sec. 3, Blk. 33, H.&T.C. Sur. ..... Shut down 1,200 ft.
Richardson et al's No. 5 O'Brien et al, 330 ft. from N and 2,970 ft. from W of Sec. 5, Blk. F, G.M.M.B.&A. Sur. ..... Top pay 2,573 ft.; gauged 9,600,000 ft. gas; preparing to drill deeper.
Rickford & Smith's No. 1 Johnson, 120 ft. NE and 175 ft. SE of N cor. Sec. 7, Blk. 32, H.&T.C. Sur., but located in Sec. 11, Blk. 5, H.&T.C. Sur. ..... Drlg. 480 ft.
California Co. et al's No. 1 Lanham, 990 ft. from NE and SE, Sec. 25, Blk. 34, H.&T.C. Sur. ..... Building rig.
California Co.'s No. 1 Gordon, 330 ft. from NE and SE Sec. 6, Blk. 34, H.&T.C. Sur. ..... Location.
T. P. Coal & Oil Co.'s No. 1 James, 330 ft. from SW and SE, Sec. 5, Blk. 34, H.&T.C. Sur. ..... Location.
Shipley et al's No. 5 Hayzlett, assume common line Secs. 16 and 17 is N and S, 220 ft. S and 1,910 ft. W, Sec. 17, Blk. 5 ..... Standard rig.
Shipley et al's No. 1 Monroe, 330 ft. SE SW Sec. 3, Blk. 1 ..... Shut down 2,520 ft.

T. P. Coal & Oil Co.'s No. 1 Barker, 330 ft. from SW and NW of Sec. 27, Blk. B-29, Public School Land..... Shut down 2,425 ft. for storage.
California Co.'s No. 1 Allen, 2,310 ft. from NE and 330 ft. from SE, Sec. 30, Blk. 34, H.&T.C. Sur. ..... Drlg. 1,487 ft.

WINKLER COUNTY

Empire Gas & Fuel Co.'s No. 1-C Daugherty, 990 ft. from S and 2,310 ft. from E. Sec. 16, Blk. 74, Public School Land ..... Est. 2,000 bbls. sulphur water; will probably plug; total depth 3,200 ft.
Magnolia Pet. Co.'s No. 1 Bashara, 1,650 ft. from S and 2,310 ft. from W, Sec. 17, B-3, P.S.L. Sur. ..... Fishing 268 ft.
Magnolia Pet. Co.'s No. 3 Scarborough, 1,650 ft. from N and 990 ft. from W of Sec. 1, Blk. 77, Public School Land ..... Cleaning out 2,861 ft.
A. W. Phillips' No. 2 Brown et al, 2,000 ft. S and W of NE Sec. 4, Blk. B-5, Public School Land ..... Shut down 3,506 ft.
Liner Drlg. Co.'s No. 1 Campbell, 330 ft. from N and E cor. Sec. 2, Blk. B-5 ..... Shut down 4,639 ft.
Turman et al's No. 1 Daugherty, 2,310 ft. from E and 2,310 ft. from S line, Sec. 16, Blk. 74, Public School Land ..... Drlg. 2,952 ft.

ECONOMIC PROBLEM OF UNIT OPERATION

(Continued from Page 30)

reasonable oil prices, it would also emphasize the effect of the discount factor in reducing present worth of the properties. One hypothetical valuation assumed that competitive operation would flood the market with the result that the price of Kettleman oil would be lowered to 50 cents per barrel during seven years of flush production. Using an arbitrary recovery factor of 50,000 bbls. per acre, it was found that under these conditions the estimated total net income would amount to $390,000,000 and the present worth of the field after applying the discount factor would be 83 per cent of this or $323,000,000. Another valuation was made using the same arbitrary recovery factor but assuming that unit operation would delay recovery to such an extent that 18 years would be required to recover the same amount of oil as would be recovered in seven years under competitive operation. It was also assumed that present prices would be maintained. Under these conditions, the estimated total net income would amount to $875,000,000 and its present worth after applying the discount factor would be 61 per cent of this or $535,000,000. While these figures are from a hypothetical example, they are within the realms of possibility as shown by past history of the oil business. They are interesting because they indicate that a drastic reduction in the price of oil has much greater effect on ultimate earnings than even a pronounced deferment of production.

The following paragraphs outline some of the interesting problems that arose during preparation of the Kettleman plan as well as some features of other plans furnished by other writers.

Members' Interest in Production

Fundamentally, every member is entitled to the share of the total oil, gas and natural gasoline produced from a field, that the productivity of his property for these products bears to the productivity of the field for the respective products at the time the unit company is formed. Just how to determine these proportions is one of the most difficult engineering problems in unit operation.

The simplest method of determining members' interests and the one most often suggested is on the basis of proved acreage. This eliminates, to a great extent, controversies over the relative state of productivity of oil, gas and gasoline in different parts of the field. It may be argued that operators on the crest of the producing structure have proportionately more natural gas, and possibly more casinghead gasoline than their neighbors on the flanks and conversely operators on the flanks may have more oil than operators on the crest, and therefore the original values of their respective holdings are quite different. It must be recognized, however, that each has valuable assets which can only be fully realized by co-operative action. The operator with most oil under his lands needs the gas energy, of which his neighbor may have a surplus, to enable him to effect greatest possible ultimate recovery. The man with most gas needs a share of the oil revenue because with reasonable field oil production to insure a stable market, the oil is immediately salable and of considerably greater value than the gas that accompanies this oil. Also, the gas produced with the needed oil may be greatly in excess of market demands and therefore of little value at that time. Great differences in productivity and values of different properties in a field are often more fancied than actual and the simplicity of determining interests on the basis of productive acreage commends this method.

The Van Field plan and the original Kettleman plan provided for membership interest based on proved acreage which eventually will be weighed for productivity. Until enough development work can be done to provide necessary data for weighing, one percentage figure, based on proved acreage, is established for dividing the production or revenues and the expense among members. The Kettleman plan provided that ultimately three percentages would be established for dividing oil, gas and natural gasoline productions. These would depend, first, on proved acreage and, secondly, on engineering estimates of the proportion of recoverable amounts of these products under each individual's lands at the time of incorporation of the unit association to the total amounts of such products recoverable from the entire field. Because of its intangible nature, no weight was expected to be given to the usefulness of one of these products to the other in field practice. Also, it was not expected that cognizance would be taken of the effect of market demands for one product and the possible waste due to limited demand of another product which naturally accompanied the first.

Weighting Acreage

Figure 1 is a hypothetical cross section showing somewhat typical conditions in a California Field. Oil zones are usually a series of sands separated by shales which have oil in the higher parts of the fold and water around the edges. Experience proves that edgewaters are not uniform as to relative vertical location in the several sands of a zone. Sometimes dry gas accumulations exists in sands that are productive of oil on the flanks and while this is not a common occurrence in California, it is shown in the cross section to illustrate the several complications of weighting acreage. Engineers would be called upon to study such cross sections, although it is apparent the detailed sections could not be prepared until a large amount of development work had taken place. As a result of these studies, engineers would set up some such tabulation as follows:

OIL ALLOTMENT WEIGHING DIVISION OF ACREAGE FOR WEIGHING

Operator	Total proved acreage	Acreage at full weight of productivity	Full weight per cent	Acreage at partial weight	Partial acreage weight per cent	Weight factor* per cent	Remarks
A	480	0	...	480	50	50.0	Penalized for edgewater
B	640	160	100	480	†92	94.0	Enjoys full thickness of oil zone but penalized for gas cap.†
C	320	120	100	200	40	62.5	Penalized slightly for edgewater.

*To be applied to operator's total proved acreage in computing his estimated share of productivity.

†This is an oil allotment weighing only—operator B would be given credit for gas and gasoline in separate weighings for those products.

The illustration itself suggests the many complications that might arise. This method of dividing members' interests is undoubtedly the most equitable theoretically, although, practically speaking, it has a great fundamental weakness in that it requires estimates of productivity which are made even more difficult by the requirement that they be of a given past date. Accurate estimates of productivity are difficult at best but if these estimates must be as of the date of incorporation of the unit company, serious errors may develop because indicated productivity changes as exploitation takes place. The relative position of wells and the dates of completion of wells greatly influence indicated productivity. Even retroactive adjustments might fail to do equity to all parties. Such a plan places a tremendous responsibility on the engineers connected with the operation of the plan, both because of the values at stake and because of possible inaccuracies of even the most careful estimates of productivity. However, if conservatively applied, weighted acreage probably will give more accurate determinations of membership interest than acreage percentages alone.

Divisions of Capital and Operating Expense

Practically all unit plans provide for allocation of expense to members in the same proportion as their interests in the production from the unit area. In the development of the first Kettleman plan, however, it developed that certain operators wished to provide for weighting of expense as well as for productivity. These operators held, for example, that wells near the crest of the structure would be shallower than those near the edge of the field and should be cheaper to drill. Moreover, some edge wells might develop water troubles or for that matter be dry holes and the operator near the crest under competitive methods would not have these risks. They also contended that crest wells would flow longer and would produce oil without water or emulsion longer than edge wells and that production and dehydrating expenses would be less. Also, considering that wells on the crest might produce most gas and natural gasoline, the operators originally owning such acreage should pay the greatest portion of the capital and operating expense incident to gas gathering, gas sales and gasoline manufacture.

While percentages weighted for expense theoretically give greatest assurance of equity, still considered with weighted factors of productivity, they lead to possible complications in accounting that are almost staggering. Consider that a "top structure" operator, as for example B as shown in Figure 1, might have the full thickness of productive oil zone under land. His oil factor migh be penalized slightly if a gas accumulation were present as illustrated by Figure 1, but even then he would have a relatively high oil weighting factor and would also have a high weighting fector for gas and gasoline productivity. In such a field as Kettleman it would be necessary to raise the weighting factor of operator B because of light oil production from his lands as compared to heavier oil in the flanks, which adds another complication. Considering expense, operator B would be assigned a high gas expense factor because of large volumes to be handled and a low oil expense factor because of expected natural flowing wells and possibly because of shallower wells than on the flanks. The man with property low on the flank, as for example operator A, would have almost opposite factors. He might be charged with an extra large drilling expense factor because he would have to drill some twin wells, as indicated by wells Nos. 2 and 3, Figure 1, in order to drain the two bodies of oil sand that are separated by water, although some of his wells might be shallower than those belonging to B, due to the smaller penetration along the edges of A's property. These complications in working out each member's fair share of revenues and expense are enough to warrant serious consideration of a flat rate percentage based on acreage even though the weighting system theoretically gives greater exactness in allocating revenues and expense.

Adjustments of Revenues and Expense

The Van and original Kettleman plans both provide for retroactive adjustments of the amounts of production or revenues received on the basis of productivity. Either present or retroactive adjustments can be applied also to the simple acreage allotment basis, for as development proves a part of the original unit area to be nonproductive, it should be excluded from participation. Likewise, inclusion of acreage contiguous to but not a part of the unit "productive" area is desirable as this prevents offset drilling by interests not a part of the unit.

Retroactive adjustments seem logical and fair, whether they be on the basis of interests in proved acreage or on acreage weighted for productivity, particularly when the unit plan is being applied in a proved field. No one is entitled to a share of production based on a part of his original acreage that is found to be nonproductive. If the unit consists of a group of leases on wildcat acreage, which was pooled in the exploratory stage for the common good, it is possible that operators would be willing to combine their holdings, none of which was proved, and accept a final undivided interest in whatever might be found. Some operators, however, might feel that their geological work was dependable enough that they could fairly expect to have an advantage over certain others in the unit and this immediately suggests again the idea of retroactive adjustments.

It would seem that an operator who was found to have an unproductive piece of property that was excluded from participation in revenues should not be charged a share of development and operating expense for that acreage, though the equities of the latter point are less clear in as much as the operator probably would have had to incur some exploratory expense on the unproductive piece or forfeited his lease.

Protection Against Outside Development

Inclusion of every operator and landowner in a given structure in the unit is, of course, to be desired but it is not likely that this will always be possible. For one cause or another, it will frequently happen that several tracts will remain out of the unit either as regards operating ownership or royalty ownership. Such tracts raise special problems for the unit management because they will generally be developed promptly and therefore will require prompt offsetting on the unit lands. Obviously, this is the only course possible unless the owners or royalty holders of such tracts as the case may be, are willing to enter into some form of co-operative agreement with the unit company to time development and production with market demands.

Although this is a bothersome problem to the unit company, it is not necessarily insurmountable if too much acreage does not remain out of the unit or if, as in Kettleman, large blocks of outside acreage belong to one operator who is willing to enter into a satisfactory co-operative agreement with the unit company and thus insure control of development and production. To protect against a few small outside tracts where owners will not co-operate, the unit company can discontinue development on all other parts of its holdings and concentrate on wells along such property lines. The chief danger being from a situation of this kind is from overproduction which might result from competitive drilling in the event the parcels of nonco-operative outside acreage were large enough or numerous enough to force a large amount of development work by the unit company.

The Kettleman Hills plan offers an interesting example of co-operative effort between a unit company and a large outside operator. In this field the Standard Oil Co. of California owns alternate sec-

tions in fee, as shown in Figure 2, and for various reasons prefers to retain ownership and operate these properties itself, joining the unit association only in so far as its leased acreage is concerned. The Standard, however, has signified willingness to enter into a co-operative agreement with the unit association by which development and production can be equitably controlled and the dangerous factor of competitive operation eliminated. As Standard owns practically 50 per cent of the field, it is anticipated that the representatives of the Standard and the unit association can agree on such matters as rates of development and therefore protection of the respective holdings of each party.

Relations with Lessors

It is admittedly difficult to conceive that an operator could join in a unit plan if his lessors were actively opposed and it is highly desirable that the consent of all lessors be secured. By demanding fulfillment of their lease terms, which frequently include obligations for continuous drilling until the property is drilled up as well as "diligent" operation of producing wells, nonparticipating lessors could force the unit company to concentrate its work on their holdings and even to pay them royalties at the same time pro rata royalties were being paid to other participating lessors. However, even this obstacle can be overcome if too many lessors do not withhold their consent to the unit plan for the unit company may be able to discontinue production in all other parts of the field and obtain its needed production from the properties of nonparticipating lessors. As suggested previously, the chief danger of this is from overproduction.

If the plan is of the adjustment form, it may become necessary at some time to exclude some property from the productive area and to collect pro rata overpayments for production which an operator and his lessor have received by virtue of that property originally being classed as productive. If both operator and lessor still have other productive holdings in the unit, the unit company is protected for, if necessary, it can withhold a member's payments for remaining productive lands. However, if exclusion of such property entirely excludes an operator or royalty holder from interest in the unit, it may be impossible in isolated cases to collect overpayments. This must be recognized and is a strong argument for adopting a conservatively drawn line to designate the productive limits of the field. If this is done, any adjustments are likely to be in the form of reimbursements to operators on the edges from those in the heart of the field and such adjustments, of course, are well secured.

If it becomes impossible to collect overpayments from an operator who has no property left in the unit, it is suggested that the unit company charge the bad debt expense and allocate it to all members. If a lessor of a member refuses to refund overpayments, it is likewise suggested that the unit company share the overpayment. In as much as the board of directors of the unit company determines the productive limits of the field without approval of a member and that member therefore has no authority other than his own power to vote, either in including or excluding such of his lands from the productive limits of the field, it seems logical that he should not be held responsible for any overpayments of royalty which might be unrecoverable from the lessors, but that these should be deducted from the unit company's reserve fund.

Many other problems are encountered in developing a unit plan for operation of a field and discussions in this paper have been confined to matters of fundamental policy which require decision before a detailed plan can be prepared. In developing the Kettleman plan a great many points were discussed of which the following are typical:

Computation of Members' Acreage

Recognizing that all sections are not normal sections of 640 acres and that certain operators would be benefited or penalized if actual acreage figures were used instead of normal sections and subdivisions thereof, the question arose as to which method of calculating members' acreage should be used. The productivity of Kettleman North Dome Field is thought to be so great that rather substantial amounts are involved even though sections vary from normal by only a few acres. This is a strong argument for accepting acreage allotments as shown by exact surveys. However, it was finally decided advisable to calculate an operator's and lessor's acreage on the basis of normal sections and subdivisions of sections because of the lack of a definite survey which could be accepted without danger of controversy. Even though section corners were clearly marked, subdivisions of sections would have to be surveyed depending on lessors' and operators' interests, and lacking an accurate and definite survey, it was apparent that bitter disputes would arise over the areas of members' holdings.

Accounting to Members

In as much as practically all unit plans give members the right to take their shares of production in kind, the question arises as to whether these shares shall be accounted for in the usual volumetric units or in terms of money value of the products. The answer to this depends on the method employed in determining members' interests in the production of each of the commodities, namely, oil, gas, and gasoline. Also, should members' shares of capital and operating expense be obtained by the levying of assessments or should members be required to buy their shares of the products, to which they are entitled, from the unit company with the provision that the management of the unit company may retain the necessary part of members' payments for capital and operating expense, returning the balance to members in proportion to their interests as profit or dividends? If accounting for members' shares of production is done in terms of money, certain prices must be used each time an accounting is made, and presumably this will be once each month. This suggests the need for an official price for commodities because it must be the same in accounting to all members. If the unit plan is of the "adjustment form," the need for an official price is even greater, because if retroactive adjustments are made at future dates, it will be necessary that the adjustments be calculated upon the basis of the official price of commodities at the times they were produced as compared to their value at the time of adjustment.

Drilling of Wells on Nonparticipating Property

Inclusion of all possible productive acreage within the area subject to unit development is desirable if the adjustment plan is to be used because competitive drilling to protect offset wells is thereby eliminated. However, it is quite likely that certain productive acreage will be found in some fields beyond the limits of production as defined at the time of incorporation of the unit company. If possible, this acreage should be taken into the unit plan with some compensation to its owners for delayed revenues and perhaps for drainage. In considering this problem, the Kettleman committee suggested that any operator who risked the expense of drilling a well outside of the defined unit area be compensated for this well at twice its cost if it were productive with the further understanding that 40 acres of his property would be declared productive and would be accepted into the unit association with full rights of participation. If the well were nonproductive, the operator, of course, would receive no compensation for after all he would have to drill a well outside of the area which the committee thought to have reasonable chances for production.

Pooling of Gas Contracts

In as much as the market for natural gas is generally limited and the disposal of excess gas is becoming important because of a tendency of state and Federal governments to legislate against gas wastage, the pooling of gas contracts and, for that matter, of all possible gas outlets is of great importance to operators. Sales of gas differ from sales of oil because there are seldom more than one or two utilities which have pipe line connections to a field and are in position to buy surplus gas. If certain individual members of a unit company held all the gas contracts available to the field, other members would have no opportunity of sharing in the revenues from gas sales or of disposing of surplus gas in the event useful disposal became necessary through state legislation, such as the California gas law. Pooling of gas contracts, however, requires certain operators to give up a definite source of revenue which they may have secured for themselves through forehanded business methods and the problem, therefore, is one that must be studied and dealt with separately in each field.

Development and Production of Properties

The operating member or members or the board of directors of the unit company, depending on the exact organization, must be charged with certain specific duties of which the following are typical:

1. Comply with all lease obligations relating to members' properties, except as modified by lessor's conset agreement.
2. Protect unit acreage against offset development on lands outside of the unit.
3. Proceed diligently to drill wells to establish the productive limits of the field, if any form of the adjustment plan is used, in order that members' participation can be determined accurately at the earliest possible date.
4. Drill wells in such localities and in such manner as to insure greatest ultimate recovery of oil and gas with least development expense.
5. Employ most approved and efficient methods to insure greatest possible recovery of oil, gas, and gasoline from the unit area.

These topics are only a few of the many that must be studied in the preparation of a unit plan that will be acceptable to individual operators in any given field. The preparation of detailed agreements, and in case of incorporation of a separate unit company, articles of incorporation and by-laws, are legal matters which obviously require the best possible legal advice, but after all the plan is one designed to provide for practical operation of an oil field and therefore is very much a problem for the production engineer. In drafting a unit plan for a given field, it is recommended that a committee of lawyers and engineers be appointed with instructions to work jointly and not separately, for it is only by this combination of talents that the most practical plan, and yet one which meets legal requirements, can be drawn.

REFINERY OPERATORS DISCUSS PROBLEMS

(Continued from Page 31)

tion, or by introducing different fuels. By its use the human element is entirely removed. The instrument was originally developed by the Association of Outboard Motor Manufacturers for its study of exhaust noises developed by small motors. It essentially consists of a microphone which picks up the sound and these sound waves are filtered and amplified and then submitted to a milliammeter.

Interpret Distillation Curve

The next paper presented was that of Dr. Graham Edgar, giving in a simple manner, an interpretation of the gasoline distillation curve. It was clear from the curves prepared by Doctor Edgar that conflicting ideas exist regarding the applicability of the Federal Government's new gasoline specifications. Dr. R. E. Wilson of the Standard Oil Co. (Indiana) pointed out that with a reasonably well designed fuel system, and using gasoline which does not contain too much propane, a fairly wide temperature range exists at which starting occurs easily and vapor lock occurs. He said: "The lower part of the curve is a portion in which our knowledge is advancing most, but where the shoe pinches worst, is in meeting changing weather conditions. If we take a gasoline at 40° F. you see you get reasonable starting with a two to one choke setting. As a matter of interest, I obtained the maximum and minimum temperatures in Minnesota. The minimum temperature in May was 4° and the maximum temperature 103°, a range of 99°. In the month of December there was a maximum temperature of 70° and a minimum temperature of —57°, a range of 127°. In other words the 70° or 80° leeway we had on the curve is less than that needed to meet variations that take place in many points of the country in one month. Added to this, is the fact, that a given tank car of gasoline may be used over many months and not in a single state, but possibly in two or three states." In referring to the new Federal specifications Doctor Wilson continued: "The net effect of the proposed Federal specifications of 10 pounds vapor pressure is that you cannot get reasonably easy starting below about —10° F. To get what you call quite easy starting you are not allowed to ship a gasoline that will start below 4° F. This is simply an outgrowth of unfortunate circumstances. The Government needs to specify what it wishes to buy and to insure that the material be satisfactory for low temperature operation or high temperature operation, but U. S. Motor gasoline specifications have been written into the laws of the individual states without regard to weather differences that may prevail, and this cannot be satisfactorily done. It seems to me that either the whole question of state legislation on this must be fought out in the proposition that a State has no power to forbid, and does not intend to forbid, shipping gasolines which start easily below 0° F., or else that the Federal specifications must have a certain degree of flexibility, depending upon the average temperature prevailing in the State into which it is shipped." Dr. G. G. Brown of the University of Michigan, amplified this by saying: "It is almost impossible to provide a fuel which will give satisfactory starting at a temperature below —20° F. and not cause vapor lock on cars as they are now designed."

Treating Problems

The second day of the Refinery Engineering meeting opened with probably the largest delegation of refinery technologists ever assembled, and Dr. R. E. Wilson, chairman, humorously introduced H. M. Weir, W. F. Houghton and F. M. Majewski, of the Atlantic Refining Co., authors of the first papers to be read, as men of unusual nerve to attempt to present a paper on treating problems. The paper outlining the control of color of petroleum products by acid treating was then read and proved to be one of the most thorough studies of the problem ever presented. A paper of similar nature was presented by Dr. F. S. Taylor of Princeton University on "The Catalytic Reactions of Organic Sulphur Compounds." Although these papers were highly technical in nature they repeatedly stressed the practical applicability of the principles involved.

Discuss Hydrogenation

The ever popular subject of hydrogenation was then presented by Dr. R. T. Haslam of the Standard Oil Development Co. and considerable discussion followed. Dr. H. M. Weir asked the following questions: "I should like to know, if one had the problem of providing a maximum quantity of gasoline of, say, Ethyl standard, to be made from Mid-Continent crude and the gasoline to have an isooctane value of, say, 30 to 40, what relation should exist between the cracking units producing recycle stock for hydrogenation, producing the gas for the manufacture of hydrogen, and what relation should exist between the cracking capacity and hydrogenation capacity? Also, is it necessary, or advisable, to fractionate the refinery gases before manufacturing the hydrogen for use in the hydrogenation process?"

As another question, he asked: "Is it not true that in order to adjust the initial point of the gasoline made by the hydrogenation process that you must fractionate as in other processes?" He then concluded his questions by asking: "Will you please state about what quantities of heat are involved in relation to the quantity of heat used in the ordinary cracking process?" Doctor Haslam answered these questions by saying that the question of balancing the various facilities must be answered by local condi-

tions, but in general, it is the belief that when cracking on a basis that produces 35 per cent of gasoline from the gas oil charged, this would prove correct economically. Power costs, oil costs, and other factors naturally exert an influence. In answering the second question Doctor Haslam said: "If the refinery gas is extremely heavy and loaded with naphtha fractions, it would be desirable to take those out of the way. However, in most cases, it is not necessary." In answering the question of Doctor Weir regarding the need to fractionate to gain a required initial, Doctor Haslam said: "It is true, to a degree, that the initial point of the gasoline must be controlled by the temperature of condensation of the fraction, just as in the case of other refining processes." In answering the last question, Doctor Haslam replied: "It is obvious that you are putting more heat into the hydrogenation process as power, but in regards to actual heat requirements, I might say that due to the fact we have no coke in the system, the actual heat used in practice is something like 85 per cent regenerated and only 15 per cent put in as fuel." The question which followed dealt with more specific questions regarding the hydrogenation process and Doctor Edeleanu asked: "I should like to know if it is a property of hydrogenation or whether by hydrogenation the quantity of solid paraffin is raised in such a way that it raises also the pourpoint of the products. I see in the tables shown here that the pourpoint of some oils ranges from 55 to 30° F. and in all cases the pourpoints are high." Doctor Haslam answered: "In regard to Doctor Edeleanu's question—in general, he is right that the pourpoint increases. That is due to two factors, i.e., the oil is made more paraffinic, and as you make the oil more paraffinic there is a tendency not only in hydrogenation, but in nature, to make more paraffin. We also know that the pourpoint of a low colored stock is usually below that of a light colored stock. The colors of all of the oils made by hydrogenation are between 8 and 12 Robinson."

FRANKLY DISCUSS CODE WEAKNESSES

(Continued from Page 31)

a certain preferred classification from the operation of the rule.

"Being unsound in principle and practice, this exception has been the source of much practical difficulty. Every attempt to remedy or correct conditions through interpretation, suspension, or other remedy has been abortive. It was wrong to begin with, and everything that has evolved out of it has been ineffective. Suspending the rule or the limiting definitions affecting the rule has merely added to the confusion. Basing operations on unsound principle is just like deliberately taking the wrong road to get to a given destination, the farther you go, the farther you are from your objective. It matters not the means of locomotion—you cannot correct the mistake by changing from auto to train, or other vehicle—you must eventually come back, retrace your steps and start on the right track before you are going to make any progress toward the goal.

"I have emphasized this situation because it is the only feature of the code that lays itself open to attack as inherently unsound, wrong in principle and inoperative in practice. It is the exception which proves the rule that the code provisions generally are sound and workable.

"I do not mean to say the code is perfect. In its making, which extended over a long period of time, it encountered the inevitable conflict of ideas and wide divergencies of opinion and necessarily in the finished draft it embodies compromises. As time goes on, experience and practical operation undoubtedly will suggest revision and changes. This, however, cannot lightly be undertaken, but must be a deliberate, orderly development and evolution.

Code Rules Simple

"The rules of the code, I believe, are well known. They are written in simple, intelligible language, easy to understand and fairly read, there should be no doubt as to their application or meaning. Like every human document, the plain intent may be twisted or warped and if evasion is in the mind of the reader, he may interpret the rules to suit his own purpose.

"Rectitude of intention must accompany any attempt to interpret or apply the code. There can be no greater hyprocrisy than to pervert the clear intent and direction by technical compliance and practical evasion. We have a sad spectacle in some parts of the country where certain concerns are attempting to accomplish the impossible task of having their cake and eating it too, by adhering to the code, in their own direct operations and at the same time passively tolerating if not actually countenancing code delinquencies of distributors or others for whose actions they have at least a direct moral responsibility.

Management Responsible

"Another practical problem the code has to face is the apathy and cynicism of the management of many companies, large and small, who apparently have relied on the fct that having signed the code, it should function automatically, and who voice their disapproval and disappointment at its failures without contributing anything toward its promotion. In this connection I want to state, with emphasis, that adherence to the code and its successful operation are going to be measured by the amount of practical and genuine support it gets from the executives of the larger companies. A sales force will respond to real leadership. I regret to say that I have heard from the lips of some executives cynical and unsympathetic expressions about the code, without constructive suggestions or apparent willingness to take hold and help. I often wondered if these men realized that in making these utterances, they are establishing themselves as the greater barrier to the successful operation of the code. Such a man, instead of standing foresquare behind the code, will consciously or unconsciously, convey to his people that his belief is half-hearted and equivocal and he will be indirectly sponsoring a lack of interest and perhaps active disregard for the code. If there is laxity on the part of any company in living up to its code obligations, I unhesitatingly place the blame squarely on the management of that company. I mean to say that we cannot look to a field organization to perform unless the executives and management are in wholehearted sympathy with the code. Any executive who claims that it is not possible to control salesmen merely indicts himself as incapable of running his own business—I repeat here that salesmen will respond to good leadership."

Throughout the series of reports made by the various regional chairmen, there were other direct references to improper practices but in summary, this evidenced a healthy condition. These criticisms were all constructive and the code has now reached sufficient recognition that it may withstand this type of criticism.

In actuality, the code has fully proven its worth during its short trial period and its future possibilities are seen by the fact that now every one of the 48 states have an active code committee and more than 16,000 marketers have signed the code hoping to carry out its provisions in spirit as well as meeting the letter of the code.

Outline State Meeting

In estimating the future value of the code, H. W. Dodge of The Texas Company said the welfare of the code rested in the hands of the individual state committees. He then suggested a method of procedure for the state committees to adopt in keeping the code a workable and respected instrument. He said:

"There is no surer way of stimulating interest and following the necessary activity than by a meeting of the state committee at least once a month at state code headquarters. In some states code committees are holding weekly meetings presided over by the state secretary or state chairman. These meetings are held in different parts of the State each week. The subject matter is largely of an educational nature and the weekly meetings are used for a discussion of the code by those present and to more thoroughly acquaint members and nonmembers with what can or cannot be done within the code of ethics.

"Holding the meetings in different parts of the State brings the code and its influence to all localities. In this way the influence of the code can reach members and nonmembers and the employes thereof unable to attend the headquarters monthly meeting. In some of our southeastern region state meetings we have had representatives of one oil company at such meetings. The managers have directed that every selling employe within a three or four hours' journey to the place of meeting be present at the meeting. Such handling, it seems to me, is beneficial in many ways and should be adopted as far as possible by all code members. Let us have as full attendance as possible at our state and educational gatherings.

Routine of Meeting

"In order to conserve time and to present a more orderly handling of affairs it is suggested in our monthly meetings that a definite order of business be followed:

"The plan followed is to have each member rise, give his name, position, and the company that he represents. In writing up the minutes the secretary makes a list of all committee members under one heading, guests and visitors under a second heading. It may be interesting to know that semiannually we expect to compile statistics and show the percentage of attendance in person by each member, the number of times he was represented by proxy and the number of times his company was not represented at all.

"Most of our state committees send a copy of the minutes to each member and this results in either the minutes being adopted or corrected without being read in full.

"Communications to the state committee from the American Petroleum Institute, the regional chairman or neighboring code committee chairman, are next read and handled. Any new business before the committee is taken up at this time.

"Complaints left over from the previous meeting is the next order of business, with the idea that complaints should be handled as promptly as possible. If the number is too great to handle at the meeting when presented all those left over will be first considered at the next meeting. New complaints are next considered and as rapidly as possible disposed of. The last subject mentioned for the meeting is the matter of unfinished business, after which adjournment is taken.

"We have found that the above outline of a state meeting has resulted in a saving in time and a much more orderly dispatch of the problems before the committee.

Complaints

"May I tell you of the method we are using in the southeastern region in the handling of complaints which, I think, is a very efficient procedure.

"Members are furnished with a standardized form, which is made out in triplicate. One copy of the complaint is retained by the complainant, two being sent to the secretary of the state committee who in turn forwards one copy to the company complained against. Before the next meeting of the state committee the companies involved get together to clear up the complaint but if this cannot be done then the complaint is brought before the next state meeting.

"When the secretary receives the complaint he dockets it by giving it a number, and in this way all complaints received are definitely registered and the disposition thereof indicated in the state committee's records. If an appeal is taken it is so indicated in the state committee's record and the file held open until final disposition by the regional chairman, the executive vice president of the American Petroleum Institute, or the Federal Trade Commission, as subsequent handling may necessitate.

"We have noticed a rapid increase in the number of complaints. This is a healthy sign. It indicates that interest in the code is growing and, in addition, that the oil companies have confidence that violations of the code can be corrected through the channels arranged.

"I am firmly of the opinion that unless complaints are handled promptly we will find that the disappointment following will do much to destroy confidence in the code generally."

Explains Spirit of Code

The "spirit" of the code had been often referred to in the progress of the meetings and E. C. Hall of the Standard Oil Co. (New Jersey) defined the spirit of the code as "confidence." He said: "Confidence that its provisions, if observed, will assist us in meeting our problems and earning the profits to which we are entitled. Confidence that you and I by endeavoring to observe its provisions and further its purposes will acquire personal satisfaction and respect from our competitors. Confidence that your competitor is not as bad as he is often described to be. He has his problems and he is just as anxious to solve them as you are to solve yours, and your confidence in the code will be contagious and he will soon find himself applying its rules to his problems."

PANHANDLE FIELDS

(Continued from Page 61)

Maer and Hamilton's No. 2 Jeffery, oil sand 815-30 feet, initial production 200 bbls., total depth 830 feet. E. R. Rigg's No. 2 Kirkland, oil sand 704½-29 feet, initial production 205 bbls., total depth 706 feet. Wise and Jackson's No. 1 Nicholson, location abandoned. Baker and Pardue's No. 2 Donnell, gas sand 612-20 feet, initial production 1,500,000 feet of gas, 220 pounds rock pressure, total depth 622 feet. Fred Barron's No. 2 Kisinger, gas sand 2,505-16 feet, initial production 15,000,000 feet of gas, with 690 pounds rock pressure, total depth 2,516 feet. Corzelius and others' No. 1 State land, temporarily abandoned. Roeser and Pendleton's and Slick's No. 1 Jeffery, dry and abandoned, total depth 4,092 feet. Shaw Oil Corp.'s No. 2 Kisinger, location temporarily abandoned.

COMPLETIONS IN RANGER DISTRICT

Callahan County

Meredith and Benton's No. 2 Berry, gas sand 533-37 feet, initial production 5,010,000 feet of gas, total depth 537 feet.

Coleman County

Atlantic Oil Producing Co. and others' No. 2 Taylor, gas sand 1,111-18 feet, initial production 3,000,000 feet of gas, total depth 1,118 feet. Kirk and others' No. 1 Coursey, dry and abandoned, total depth 3,240 feet. Prairie Oil & Gas Co.'s No. 1 Burns, dry and abandoned, total depth 1,636 feet. Baker Brothers' No. 1 Fineash, dry and abandoned, total depth 973 feet. Sterling Oil & Gas Co. and others' No. 1 McCulloch, total depth 2,125 feet, plugged back to 2,120 feet, shot 10 quarts 2,107-25 feet, initial production 17 bbls. oil and 17 bbls. of water.

Brown County

McCarter and others' No. 1 Hazelwood, dry and abandoned, total depth 1,150 feet. Prairie Oil & Gas Co.'s No. 2 Turner, dry and abandoned, total depth 2,250 feet. Hynes and Engle's No. 1 Leach, shot 20 quarts 1,154-72 feet, and 30 quarts 1,154-78 feet, initial production 300,000 feet of gas, total depth 1,178 feet.

Eastland County

Nunn and others' No. 1 Higgins, dry and abandoned, total depth 1,496 feet.

Shackelford County

H. & H. Drilling Co.'s No. 1 Simpson, dry and abandoned, total depth 760 feet. Thompson's No. 1 Griffith, dry and abandoned, total depth 750 feet.

Stephens County

Grantor Oil Co.'s No. 38 Swenson, top pay 1,723-58 feet, shot 5 quarts 1,732 feet and 10 quarts 1,759-69 feet, initial production 10 bbls., total depth 1,776 feet. Grantor Oil Co.'s No. 39 Swenson, top pay 1,721-69 feet, shot 10 quarts 1,721-40 feet, and 40 quarts 1,760-90 feet, initial production 5 bbls., total depth 1,790 feet. Same company's No. 40 Swenson, top pay 1,744-85 feet, initial production 20 bbls., total depth 1,826 feet.

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ROCKY MOUNTAIN AREA

(Continued from Page 51)

Dooley, C NW SW, Section 24-20-29, Twin Mounds Pool, is bottomed at 1,070 feet in lime and is straightening a crooked hole. Total gas amounts to 6,000,000 feet a day. Lockhart & Co.'s No. 1 Livingston, C SW SW, Section 23-24-28, Pearce Canon district, is drilling at 1,300 feet in salt. It topped salt at 535 feet and elevation is 2,915 feet.

San Miguel County

Star Oil Co.'s No. 3 Adams, NE cor., Section 25-17-17, Dunken Dome, which has been idle at 3,270 feet for nearly a year, is reported to have resumed and to be drilling at 3,350 feet in the top of the upper Pennsylvanian formation.

Luna County

Angelus Oil & Mining Co.'s No. 3 State, C NW SE, Section 20-21-10w, Deming district, is reported drilling at 5,870 feet in the Pennsylvanian formation.

McKinley County

San Juan Coal & Oil Co.'s No. 1 Santa Fe, SE SE, Section 27-18-9w, Seven Lakes district, is shut down for orders at 2,110 feet.

San Juan County

Murchison Oil Co.'s No. 4 Angel Peak, NW SW SE, Section 11-28-11, Kutz Canon district, is bottomed at 1,786 feet (corrected) with 6⅝-inch cemented on top of the Picture Cliff and is rigging up cable tools to drill in. The rotary was moved 1,200 feet to the west and its No. 5 Angel Peak, NW cor., Lot 1, Section 11-28-11, is spudding at 40 feet. Kutz Canon Oil & Gas Co.'s No. 1 Day, SW cor., Section 20-28-10, pulled 6¼-inch casing when it was unable to secure circulation to cement, and is rerunning same. Total depth is 2,016 feet in the top of the Picture Cliff with a good show of gas. J. B. Witt Oil & Gas Co.'s No. 1 Mangun, SE SW SE, Section 33-29-11w, Bloomfield district, is moving in for a test to the Picture Cliff. It is expected to be a little deeper than in the nearby Kutz Canon district. Continental Oil Co.'s No. 24, SW cor. NW, Section 1-29-19, Rattlesnake, is drilling at 3,640 feet, corrected depth. San Juan Leasehold Co.'s No. 3 Bowman, NW NE, Section 30-30-15, Meadows district, is bottomed at 2,543 feet and recementing cave at 2,400 feet.

Valencia County

Thomas B. Harlan and others' No. 2 Harlan Ranch, NW cor., Section 5-6n-2e, is drilling at 3,810 feet. Acme Development Co.'s No. 1 Santa Fe, SW NW, Section 27-7n-4w, is shut down for orders at 4,690 feet.

Rio Arriba County

Governardo Dome Oil Co.'s No. 1, SE, Section 15-29-7w, is drilling at 700 feet.

COLORADO

Weld County

Another week has passed without any material change in conditions at the Platte Valley Petroleum Co.'s No. 1 Patterson, NE SE NW, Section 24-6n-61, on the Greasewood Dome in Weld County, Colorado, which came in on October 10 at 6,667 feet flowing by heads. Shipments from the well aggregated 20 tank cars on November 12. This oil is being trucked by the Continental Oil Co. from the well to Orchard, on the Union Pacific Railroad, where it is loaded in tank cars and shipped to the Continental refinery at Denver. The capacity of the tank cars varies, but it is safe to say that between 3,000 and 4,000 bbls. have been shipped. The company has not gauged the well, but places production at 150 to 200 bbls. a day. Continental has one 5,000-bbl. tank and two 500-bbl. tanks at the well. Visitors are excluded and officers explain this is due to the fire hazard.

No definite date has been set for the drilling in of the well. The company has ordered high pressure gate valves, control head and all necessary equipment and this is due to arrive in a week or 10 days. It will then be installed and all preliminary work completed, but it does not follow that drilling will be resumed at once. The rig used in drilling the well belongs to Shaffer Brothers, the contractors, and they have some acreage upon which they propose to drill. They are said to be anxious to complete No. 1 Patterson and begin their own operation. However, the company has announced its policy to be to wait until everything is in readiness including the disposition of the oil. President Stahl, of the Platte Valley company, says no contracts of any kind have yet been made other than the temporary arrangement for the Continental Oil Co. to take the crude pending some permanent arrangement. Several companies have made proposals not only for the purchase of the crude but for development of part of the company's acreage, but none has yet been accepted. Some leases made by the major companies are being recorded, but as a rule very little information is being given out as to deals. The Midwest Refining Co. is known to have closed on 960 acres in Morgan County, 1 to 3 miles east of the well and the Continental Oil Co. has several tracts close in. The Texas Production Co., the Reiter-Foster Oil Co., the Indian Territory Illuminating Oil Co., and others are active in the district and their work includes not only the Greasewood Dome, but other likely structures in that general area.

In a general story on the Greasewood Dome and northeastern Colorado published in The Oil and Gas Journal on October 23, credit for the first geological work on that structure should have been given to Charles A. Culter, geologist, of Fort Morgan, Colo. Mr. Culter began the geological survey early in the spring of 1924 on the Greasewood and Fort Morgan anticlines. This was before the United States Geological Survey, headed by Doctor Mather, were in the field and Mr. Culter completed his work independently of them and before they were in the field. Dr. R. D. George, State geologist, sent two students of the State University at Mr. Culter's request to go over the land, but they are said to have reported adversely on the structure. During the summer of 1925 Mr. Culter blocked up the acreage and spotted No. 1 Patterson and organized the Platte Valley company to explore the structure. He was president of the company until the fall of 1927.

Morgan County

Indian Territory Illuminating Oil Co.'s No. 1 State, C NE NE, Section 16-1n-57, on the Fort Morgan anticline, 35 miles to the southeast of the Greasewood well, is reported to be held up at 3,670 feet with 8¼-inch pipe frozen.

Arapahoe County

MacDeb Drilling Co.'s No. 1 Fitzsimmons, C S half NE, Section 7-4s-66, near Aurora, has not yet resumed drilling below 5,692 feet where it has just cleaned up a fishing job that lasted several months, but expects to resume making hole in a few days.

Washington County

Fred R. Zimmerman and others' No. 1 Middlemist, SE SW SE, Section 14-4s-56, Middlemist structure, formerly Middlemist Oil Co., is preparing to resume. The first work will be to run a string of 12½-inch casing to carry. The 15½-inch was cemented at 1,030 feet when operations were suspended several months ago.

Jefferson County

Ruby Hill Oil & Gas Co.'s No. 1 Braden, SE cor., Section 24-4s-69, near Denver, is bottomed at 3,784 feet and underreaming 6¼-inch. The hole is showing sufficient gas to burn several feet above the top of the bailer.

Larimer County

Continental Oil Co.'s No. 3 Scott, SW SE, Section 6-9-68, Wellington Dome, an old producer in the Muddy sand deepened to test the Dakota and Lakota, in both of which water was found, is to be deepened. It is bottomed at 4,637 feet and waiting for casing. The 6¼-inch was set on top of the Lakota at 4,612 feet. The Morrison and Sundance sands have never been drilled on this structure.

Park County

South Park Oil & Gas Co.'s No. 1 Esche, SE NW, Section 5-9s-76, Muleshoe structure, is bottomed at 600 feet in the Hygiene sand and running a string of 10-inch pipe, and South Park Oil Co.'s No. 1 Milligan, NE SE, Section 13-8s-76, Jefferson district, is bottomed at 1,580 feet and running 8¼-inch.

Pueblo County

Anchor Oil Co.'s No. 1 Eseley, SW SW, Section 35-22s-67, 20 miles southwest of Pueblo, is drilling at 250 feet. Contract for a 1,000-foot hole to the Sundance was let to Louis Drobnick. Kuykendall Oil Corp.'s No. 1 Beecher, SW cor., Seciton 7-22-66, Rock Creek, has reached contract depth of 1,000 feet. It is bottomed in a dry sand in the Morrison formation. It will be carried on down to the Sundance.

Fremont County

Thomas A. Davis' No. 6 Hassler, NE SW SE, Section 21-20-69, South Florence, spudded on November 7 in a 10-inch hole to go to 2,800 feet if necessary. Continental Oil Co.'s No. 1 Gibbons-Truesdale, NW NW, Section 20-20-69, is drilling at 2,290 feet and J. B. Silengo's No. 1, NE NW, Section 10-19-70, Canon City district, is shut down at 1,525 feet.

Routt County

Texas Production Co.'s No. 4 Carstarphen, NE NW NW, Section 5-6n-86, Tow Creek, is bottomed at 3,277 feet and preparing to run 2½-inch tubing to put on production. This well, which had 600,000 feet of gas and flowed when the tools were pulled, probably will make 200 bbls. or better and is one of the best wells completed in the northern part of the field. It is one-fourth to one-half a mile north and northwest of three producers on the Carstarphen tract and is about 200 feet shallower than the other producers. The interesting feature is that it is only one-fourth of a mile south of an igneous plug and the nearest to it of any of the wells. Apparently the formations rise as they near the plug. There are several dry holes between this group of wells and the southern part of the field, indicating that there are two separate pools in the shale.

Moffat County

Texas Production Co.'s No. 4 Wick, NW NW, Section 10-4n-91, Moffat Dome, is bottomed at 4,557 feet and swabbing and bailing. It is in the Morrison in which there was a show of oil and gas and the hole was cemented at this depth. Same company's No. 12 Knowlton, SW SE, Section 33-5n-91, is bottomed at 4,592 feet and has cleaned out to 4,587 feet. Bottom water was plugged off. Midwest Refining Co.'s No. 24 Hannewalt, SE SE, Section 4-6n-92, Bell Rock, is standing at 3,040 feet and probably will be completed at this depth as a gas well. Mountain Fuel Supply Co.'s No. 2 State, SE NE, Tract 37-12n-100, Hiawatha, is bottomed at 815 feet and fishing for parted 15½-inch at 315 feet.

UTAH

Utah Southern Oil Co., which has done extensive exploration work in southeastern Utah, is preparing to drill another test in that area. Materials are being moved in for its No. 1 Balsey, NE, Section 31-23-21, on the Salt Valley Dome, in Grand County. Last year this company drilled its No. 1 King in the SE NE SE, Section 13-23-20, Salt Valley, and lost the hole at 3,829 feet. The King well was intended as a flank test to the Pennsylvanian, the theory being that the location was near the shore line of the ancient sea that deposited thick beds of salt that were encountered in the wildcats south of Moab. While some salt was found, there were beds of Pennsylvanian shale and shows of oil and gas. The new test is on the top of the structure and will go to the lower Pennsylvanian at around 3,500 feet. Mountain States Petroleum Corp. and Utah Oil Refining Co. are jointly interested in the test.

WYOMING

Recent transfers of several officials of the Midwest Refining Co. from the Casper headquarters to the headquarters of the parent and affiliated companies in other cities caused some uneasiness among the business men of Casper as to the possibility of its personnel and activity in that city being reduced. President T. A. Dines, following a conference with a committee from the Chamber of Commerce, addressed a letter to that organization assuring it that the company had the best interests of Casper at heart as evidenced by its own action. He pointed out that there was no reason to doubt the continuance of Casper as a refining center of the Rocky Mountain area. He said the large reserves of crude oil tribu-

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tary thereto, which are not too far away for economical transportation at the proper time, indicates that Casper will be a refining center in the future as in the past. The Midwest recently completed at the Casper refinery a modern lubricating plant and has authorized an expenditure of a considerable sum for the erection of a new asphalt plant. It also has authorized the expenditure of a large sum for the erection of a modern cracking plant at Greybull for handling a limited quantity of black crude, which is all the market will absorb at present. Among a shifting of officials that is scheduled to take place is the transfer to Denver of George H. Jaques, vice president in charge of production. This is necessary on account of the company's interests in the various fields of Wyoming, Kansas, Colorado, New Mexico and Texas, all of which come under his supervision. This is a matter of economical and efficient operation and will involve the transfer of probably 8 or 10 men directly connected with his department.

Weston County

One of the best completions in several months was reported in the Osage Field in the northeastern part of the State this week in the Osage Trust Co.'s No. 8, NW cor. SE, Section 14-46-64, which is flowing 800 bbls. a day from sand at 1,730-34 feet, the sand being penetrated only 4 feet. This field has shown a number of good wells in recent months. Yellowstone Petroleum Co.'s No. 2 McCullough, CEL NW NE, Section 23-46-64, some distance to the south of the Osage Trust well, found the sand at 1,790-1,801 feet and is flowing 50 bbls. per day. Henderson, Garbarimo and others' No. 1 Bock, SW cor., Section 2-46-64, had a small show of oil at 1,683 feet in the top of the Muddy which started considerable trading in acreage in that area, but at 1,750 feet the hole was dry. A new operation is the La Fleishe Oil Co.'s No. 14, CEL SE SW, Section 17-46-63, which is drilling at 500 feet. Nichols and others' No. 4, SE NW, Section 8-46-64, is drilling at 212 feet. Several drilling wells in Osage have shut down as a result of the recent cut in the posted price of crude oil. These included Lambie Oil Co.'s No. 6 Bock, C SW NE, Section 14-46-64, which shut down at 1,692 feet on top of the Muddy, Osage Trust Co.'s No. 9, SE cor., Section 14-46-64, which cemented the 8¼-inch at 1,200 feet and shut down, and Osage Trust Co.'s No. 10, NW SE, Section 14-46-64, which shut down after cementing the 8¼-inch at 1,200 feet. Dornacher, Bock & Monahan's No. 1, SE cor. SW, Section 11-46-64, is drilling at 700 feet, and the Decker Oil Co.'s No. 1, NW NE NE, Section 1-45-64, is running the 6⅝-inch at 1,925 feet.

Niobrara County

Argo Oil Co.'s No. 2 Ford, SW SE, Section 33-36-65, Lance Creek, is bottomed at 3,346 feet in the Muddy sand, which had 5,000,000 feet of gas, where the tools are stuck. The 4¾-inch will be pulled and rerun. The hole is to be carried to the Dakota where a larger flow of gas is expected.

Converse County

Phillips Petroleum Co. has a corp of geologists checking the region between Douglas and the Lance Creek Field and is doing considerable core drilling under the direction of D. J. Wolff, of Wichita. This company has taken over 30,000 acres with an option of 75,000 acres additional from Northern Oil Co. of Denver, of which Robert G. Taylor is the head. The area was tested with a magnetometer the past summer and core drilling is to confirm the geophysical geology. If the Phillips company should develop sufficient production in that area, a refinery most likely will be built at Douglas.

Continental Oil Co.'s No. 50 Whiteside, SW SW, Section 9-33-76, Big Muddy, is drilling at 3,345 feet in blue shale, and Ohio Oil Co.'s No. 5 Jones, Section 9-33-76, is drilling at 3,348 feet. Both are old wells being deepened to the Lakota sand from the Wall Creek. The Weisman Big Muddy Oil Co. is moving in for its No. 1 Glenrock Sheep in Section 3-33-76, and its No. 1, SE SW, Section 6-33-76, is drilling close to the top of the Frontier at 3,125 feet. Converse Oil & Gas Co.'s No. 1 Carlson, SW SW, Section 27-33-73, Alkali Creek, is shut down at close to 2,000 feet.

Natrona County

Midwest Refining Co.'s No. 11 Middy, C NE NE, Section 23-35-79, the discovery well on the Midway Dome, in which Salt Creek Producers and Mountain Producers have a large interest, has increased its production from 150 bbls. a day to 208 bbls. It is bottomed at 5,207 feet and has not been shot. Same company's No. 11, NW NW, Section 32-34-77, Geary Dome, is fishing at 165 feet. Midwest's No. 29-DT, NW, Section 35-40-79, Salt Creek, the test that went to the granite after casing off 1,800 bbls. a day in the Tensleep, is bottomed at 3,775 feet after plugging back to the top of the Tensleep and is preparing to run 8⅝-inch casing before drilling into that horizon again. Same company's No. 8-SD-2, SE, Section 26-40-79, is drilling at 2,975 feet, and its No. 29-SD-3, NW NE, Section 26-40-79, is drilling at 110 feet.

Park County

Resolute Oil Co.'s No. 1, SW NE, Section 17-57-101, Badger Basin, which now holds the record for depth for the Rocky Mountain area, is drilling at 8,020 feet. It was in the Eagle formation of upper Cretaceous at around 3,400 feet. Midwest Refining Co.'s No. 31 Rosenberg, SW cor. SE, Section 24-58-98, Frannie Dome, is drilling at 2,689 feet in black shale, and Texas Production Co.'s No. 2 Sonners, SW SW, Section 20-51-100, Oregon Basin, is drilling at 3,090 feet. Continental Oil Co.'s No. 27-Elk-2, NE NE, Section 24-58-100, Elk Basin, is shut down at 1,473 feet.

Hot Springs County

Midwest Refining Co.'s No. 8 Weeks, NW SE, Section 6-44-98, Wagonhound, is bottomed at 4,490 feet and straight-reaming.

Carbon County

Midwest Refining Co.'s No. 27 Union Pacific, SE SE, Section 11-20-81, Elk Mountain, is bottomed at 695 feet and fishing for the 18-inch bit.

Fremont County

Texas Production Co.'s No. 1 State, SW SW, Section 36-34-95, Alkali Butte, is bottomed at 4,485 feet and working on pipe which is frozen. Kinney-Coastal Oil Co.'s No. 1 Dykeman, SE SW, Section 22-3n-1w, Pilot Butte, has plugged back to the gas sand in the Muddy at 3,362 feet and is preparing to test. If negotiations for the sale of the gas, which are now pending, are concluded, another well probably will be drilled at once.

Sublet County

Circle Oil Co.'s No. 2 Elkhorn, NE, Section 17-27-113, La Barge, is drilling at 1,600 feet and carrying 10-inch.

Sweetwater County

Mountain Fuel Supply Co.'s No. 1 Cappers, SW NE, Section 2-19-104, North Baxter Basin, is drilling at 3,240 feet.

MONTANA

The new deep well of the Ohio Oil Co. located on the Dry Creek structure, Carbon County, was given a production test and flowed at the rate of 2,040 bbls. daily. The test ran for 16 hours. This well is over a mile deep and is making an oil of 52 degrees gravity. A pipe line has been laid from Dry Creek to Bridger on the Burlington and is carrying the crude to the loading rack at that point. A second line from the Dry Creek structure carries gas from the first well to the natural gas line serving Billings. The oil producer is the second well on the Dry Creek Dome.

An interesting report of the Ohio Oil Co.'s No. 3 Baker in the Sunburst Field shows this well to be the most consistent oil producer in the State of Montana. This well was drilled in 1923 and found production in a crevice of the Madison lime at 1,674 feet. The well is in Section 4-35-2 in the Sunburst Field. It started off with a daily flow of 1,500 bbls. and is now doing about 200 bbls. daily.

Rocky Mountain Production

Average daily runs from fields week ending November 15:

WYOMING	
Salt Creek	28,100
Big Muddy	2,030
Grass Creek	2,130
Elk Basin	810
Dallas	280
Dry Creek	220
Frannie	860
Hudson	220
Lovell	10
Teapot	30
Warm Springs	100
Rock River	2,130
Lance Creek	250
LaBarge	1,640
Poison Spider	390
Oregon Basin	2,500
Osage	1,000
Ferris	10
Byron	510
Lost Soldier	3,050
Simpson Ridge	50
Dutton Creek	40
Total Wyoming	46,350
MONTANA	
Cat Creek	1,140
Lake Basin	60
Kevin-Sunburst	2,540
Pondera	1,190
Border	540
Total Montana	5,470
COLORADO	
Florence	482
Moffat	1,177
Fort Collins	1,150
Iles Dome	1,083
Rangley	50
Tow Creek	350
Boulder	25
Total Colorado	4,217
NEW MEXICO	
Rattlesnake	1,315
Hogback	440
Table Mesa	265
Artesia	731
Cap Rock	444
Getty	123
Hobbs	36,115
Jal	1,328
Lea	3,047
Miscellaneous	1,812
Total New Mexico	45,620
Total Rocky Mountain	101,657
Total previous week	101,411
Difference	246

CALIFORNIA EXTENDING MARKETING FACILITIES

LOS ANGELES, Calif., Nov. 17.—One of the most interesting developments in California this year from a marketing standpoint has been the aggressive expansion of distributing facilities by all major companies. At least $25,000,000 has been expended by the larger refiners since January 1, 1930, in the construction of new service stations on the Pacific Coast despite the obvious necessity of a moratorium in construction work if distribution costs are to be kept down.

Each company justifies expenditure in the duplication of facilities on the assumption that it is a capital investment which should show a revenue and, while this may be true, the increase in gasoline sales has not been commensurate with the amount invested in new stations.

The Texas Company, Standard, Union, Shell, Associated, General Petroleum and Richfield have been more or less active in construction work this year. While commenting on the increasing cost of marketing refined products it might not be amiss to call attention to the courtesy and credit cards which have come into almost general use throughout the country. This form of merchandising has been present on the Pacific Coast for several months and, while this method may be advantageous to large companies able to extend credit, its use is somewhat limited. Customers' charge accounts were quite common in California a few years ago but this practice was ultimately discontinued because of excessive costs. The use of courtesy and credit cards which permit the opening of charge accounts is no doubt convenient to customers but at the same time this method of marketing is costly. It is believed probable the plan will work out satisfactorily as long as refined oil prices are relatively high, but that it will not prove so successful if gasoline prices are substantially reduced.

PRODUCER IN FRANCE

Research work is being continued at Gabian, France, in the zone already under exploration. Drilling No. 50 furnished 250 bbls. of crude the first day, and for three days the hourly flow remained at about 7 bbls. and then fell to about half that amount. Prospecting is being continued under government auspices, and a new drilling is being made southeast of the part now under exploration.

Pipe Lines Co-operate In Fair Distribution Of Crude to Refiners

BOLIVAR, N. Y., Nov. 15.—One of the problems that has confronted the oil conservation board in the Allegany Field for some months past has been that of the supply of necessary crude for the Wellsville plant of the Sinclair Refining Co. The board has worked very hard to find the proper solution that would penalize all of the interests affected as little as possible.

Any additional lifting of curtailment during the past few weeks has been impossible due to the seasonal decline in the consumption of refined products as well as the decreased crude runs to stills by refiners.

For more than a year Tide Water has been purchasing crude in the Allegany Field from Vacuum and for a number of months has been purchasing all of Vacuum's Allegany producers' runs. Tide Water sold no crude to Sinclair until September 1, and since that date has been supplying it with about 1,000 bbls. daily.

It was considered advisable by all interests that these sales be discontinued at the close of October and a more satisfactory method set up. To accomplish the arrangement Tide Water continues purchasing during the balance of the year all Vacuum producers' runs in the Allegany district and have arranged to sell Sinclair all of the producers' runs from both Vacuum and Tide Water tanks connected to the Bradford Transit lines in the Kossuth Valley and in the Bolivar-Richburg watershed.

The lines of the Bradford Transit in these areas have been leased to the Union Pipe Line Co. from November 1, for two months and the primary gaugers, G. D. Newell and E. Montgomery, together with the oil dispatcher, J. J. Ward, will not serve the Union Pipe Line Co. during this period so that the same employes who have been engaged heretofore by Bradford Transit continue in the actual running of the crude.

The Bradford Transit lines in the area and its Bolivar station are connected into the Union Pipe Line system and will so continue during the two months' period. This arrangement will result in directly diverting to the Sinclair plant approximately 1,250 bbls. daily and it is believed will solve Sinclair's crude problem over the balance of 1930.

DEATH OF E. C. WALDVOGEL

After a four-day illness Edward Conrad Waldvogel, a director and vice president of the Yale & Towne Manufacturing Co., died of pneumonia in his residence in New Rochelle, N. Y., Thursday, November 13. Mr. Waldvogel was born in Toledo, Ohio, and entered the Yale service in 1905 as a traveling salesman. In 1910 he was transferred to New York as assistant to the general manager. He succeeded Walter C. Allen, now president of the company, as general manager in 1916. In 1920 Mr. Waldvogel was elected a director and in 1923 he was appointed vice president with the division of sales under his direction. Last April Mr. Waldvogel retired from active directive service, still remaining a director and vice president. Besides his wife, Mrs. Adelaide W. Waldvogel, he leaves three children, Edward C. Waldvogel, Jr., Roy Waldvogel and Mrs. William Weltmer.

SINCLAIR OFFICIALS ON TOUR

A party of officials of the Sinclair Consolidated Oil Corp. and Sinclair Refining Co. arrived in Tulsa Friday, November 14, for an inspection tour of some of the Sinclair properties in Oklahoma and Texas. Included in the party were H. F. Sinclair, chairman of the board of directors; Daniel T. Pierce, assistant to the chairman; E. W. Sinclair, president, and C. E. Crawley, vice president of the Sinclair Consolidated Oil Corp., and George H. Tabor, Jr., vice president of the Sinclair Refining Co., all with headquarters in New York.

SOUTHWEST TEXAS PROVEN AREAS

(Continued from Page 48)

Magnolia Petroleum Co.'s No. 13 Dix, 300 ft. E of No. 1, 150 ft. from SE line of lease, Robinson Sur.....T. D. 2,617 ft.; comp. for 360 bbls.
Magnolia Petroleum Co.'s No. 14 Dix, 150 ft. from SE line, 600 ft. from SW line, Dix lease, Robinson Sur...T. D. 2,210 ft.; drlg.
Magnolia Petroleum Co.'s No. 4 Klein, 300 ft. W of No. 1, 150 ft. from NW line of lease, Robinson Sur.....T. D. 2,578 ft.; drlg
Magnolia Petroleum Co.'s No. 4 Annie Knodel, 450 ft. from NW line, 450 ft. from SW line, Robinson Sur...T. D. 2,582 ft.; comp. for 500 bbls
Magnolia Petroleum Co.'s No. 6 Rand Miller, 150 ft. from NW line, 450 ft. from SW line, Alexander Sur...T. D. 2,558 ft.; drlg.
The Texas Company's No. 6 Anderson, 300 ft. W of No. 1, 613 ft. from S line .....Derrick.
The Texas Company's No. 6-A Knoblock, 750 ft. from SW line, 600 ft. from SE line of lease, Robinson Sur. .....Location.
The Texas Company's No. 7-A Knoblock, 1,225 ft. from SW line, 600 ft. from SE line of lease, Robinson Sur. .....Rigging up.
The Texas Co.'s No. 8-A Knoblock, 1,592 ft. from SW line, 600 ft. from SE line of lease, Robinson Sur....Abandoned location.
The Texas Company's No. 9-A Knoblock, 450 ft. from NE line, 600 ft. from SE line of lease, Robinson Sur. .....Location.
The Texas Company's No. 4 Pauline Roamel, 850 ft. from SE line, 450 ft. from SW line of lease, Hodges Sur. .....Rigging up.
The Texas Company's No. 1 Appling, 180 ft. from S line, 450 ft. E of NE cor. of Alexander Sur. in the Hodges Sur. .....Spudded.
F. L. Thomson's No. 2 Posey, 25 ft. from NW line, 300 ft. from No. 1 .....Location.

CHAPMAN POOL—WILLIAMSON COUNTY

W. D. Anderson's No. 6-A T. P. Simmons .....Rig up and shut down.
W. D. Anderson's No. 8 M. V. Lawrence .....Location.
Bartlett & Wilson's No. 2 R. E. Stewart ..... T. D. 790 ft.; drlg.
Bartlett & Wilson's No. 1 R. E. Stewart ..... T. D. 741 ft.; drlg.
Chapman and others' No. "D" 1 Abbott .....Location.
Chapman and others' No. "D" 2 Abbott .....Location.
Chapman and others' No. "D" 5 Abbott .....Location.
Chapman and others' No. "D" 6 Abbott .....Rigging up rotary.
Chapman et al's No. D-7 J. C. Abbott ..... T. D. 200 ft.; drlg.
Chapman and others' No. "D" 10 Abbott .....Location.
Collins and others' No. 6 Lawrence .....Location.
J. L. Collins & Co.'s No. 7 M. V. Lawrence, 150 ft. from E line, 215 ft. from S line of 27-ac. tract in the S. Miller Sur. ..... Csg. setting; shut down for water.
Ertell and others' No. 6 J. C. Abbott .....T. D. 815 ft.; drlg.
E. E. Ertell's No. 7 J. C. Abbott ..... T. D. 700 ft.; drlg.
Horn & Stratton's No. 9 J. C. Abbott, W side of lease, 150 ft. from S line in the S. Miller Sur. ..... T. D. 2,000 ft.; drlg
Marts et al's No. 5 T. P. Simmons, 300 ft. from No. 2, 150 ft. from S line in the S. Miller Sur. .....T. D. 2,084 ft.; comp. for 400 bbls.
E. L. Chapman et al's No. 2-A Sides .....Rigging up.
J. L. Collins & Co.'s No. 5 M. V. Lawrence, 150 ft. from W line, 515 ft. from S line of 27-ac. tract, S. Miller Sur. .....T. D. 1,462 ft.; drlg.
McNeal et al's No. 7 Kilgore .....T. D. 500 ft.; drlg.
E. C. Mead's No. 1 Abbott, 100 ft. from N and W lines of 6-ac. tract, S. Miller Sur. .....T. D. 2,166 ft.; shut down.
Sequoia Oil Co.'s No. 7 T. P. Simmons .....Location.
G. Stratton's No. 5 J. C. Abbott, 450 ft. from E line, 150 ft. from S line of 32-ac. tract, S. Miller Sur.....T. D. 1,730 ft.; set csg.

PETTUS AREA—BEE COUNTY

Batex Petroleum Co.'s No. 3 Burnett, 360 ft. from N line, 600 ft. from E line of 320-ac. tract, Kerr Sur. .....Location.
Batex Oil Co.'s No. 2 Burnett, 361 ft. N line, 900 ft. from E line of lease in the south John Pace Sur. . T. D. 3,708 ft.; plugged back; estimated 5,000,000 ft. wet gas; shut in.
J. L. Mauldin's No. 1 fee, 1,300 ft. N of S line, 150 ft. E of Medio Creek, Kerr Sur. .....T .D. 3,734 ft.; shut down for fuel.
Moody-Seagraves Producing Co.'s No. 2 McKinney, 340 ft. from E line, 450 ft. from S line, McKinney tract, R. C. Ballard Sur. .....Location.
The Texas Company's No. 2 J. R. Scott, 200 ft. from N line, 150 ft. from W line, J. M. Urango Sur.....T. D. 690 ft.; shut down.
The Texas Co.'s No. 3 J. R. Scott, 7,100 ft. from No. 1, SW .....Location.
Union Producing Co.'s No. 25 Ray, 1,700 ft. from S line, 1,400 ft. from E line of P. Miller Sur. .....T. D. 3,620 ft.; drlg.
Union Producing Co.'s No. 26 Ray, 3,500 ft. from S line, 2,000 ft. from E line, P. Miller Sur. .....Location.

AGUA DULCE FIELD—NUECES COUNTY

South Texas Production Co.'s No. 3 Walter, 800 ft. from S line, 460 ft. from E line of Walters tract in Section 34 .....T. D. 1,984 ft.; setting csg. to test gas with 650 lbs. pressure; coring.

SAXET FIELD—NUECES COUNTY

Saxet Oil & Gas Co.'s No. 2 Donnegan, 2,150 ft. due S of No. 1 Donnegan .....T. D. 6,200 ft.; drlg.
Saxet Oil & Gas Co.'s No. 7 Dunn, 2,400 ft. NW and 200 ft. NE of S cor. of Dunn farm .....Derrick.
Moody-Seagraves Producing Co.'s No. 1 Smith, 450 ft. from N and E line of 120-acre tract, J. Dunn Sur...T. D. 1,672 ft.; cored salt water sand.
Pearson Properties, Inc.'s No. 1 State National Bank ....T. D. 4,250 ft.; drlg.

WHITE POINT FIELD—SAN PATRICIO COUNTY

Saxet Oil & Gas Co.'s No. 17 Rachel, 150 ft. from N line, 1,600 ft. from E line of 200-ac. tract .....T. D. 4,896 ft.; comp. 50,000,000 ft. dry gas, 1,800 pounds pressure.

LION McFADDEN POOL—VICTORIA COUNTY

Lion Oil Refining Co.'s No. 2 McFadden, 1,917 ft. W of NE cor. and 512 ft. at right angles from N line of Edwards Sur., 660 ft. E of No. 1 in the M. J. Travesia Sur. .....T. D. 6,425 ft.; preparing to shoot drill stem.

LAREDO DISTRICT
SCHOOLFIELD-O'BYRNE POOL—DUVAL COUNTY

Magnolia Petroleum Co.'s No. 1 Edge-Hahl, 150 ft. from N line, 150 ft. from W line, Sur. .....T. D. 3,912 ft.; standing.
F. M. Frasher and R. F. Schoolfield's No. 1 Duval Land Co., 990 ft. from N line, 1,320 ft. from W line, Sur. 123 .....T. D. 2,200 ft.; drlg.

BANDADO POOL—JIM HOGG COUNTY

J. W. Pippin's No. 1 Hinnant, 150 ft. each way from SW cor., Blk. 11, Sur. 147 .....Derrick.

KOHLER POOL—DUVAL COUNTY

Co-operative Drilling Co.'s No. 4 John Dinn, 450 ft. from N. line, 450 ft. from W line, Blk. 4, Sur. 454.....Sand 1,729-42 ft.; waiting on cement.
Humble Oil & Refining Co.'s No. 50 Kohler, 2,805 ft. from S line, 165 ft. from W line of Sur. 164....T. D. 36 ft.; set surface csg.

S. R. C. POOL—DUVAL COUNTY

The Texas Company's No. 1 Duval Ranch, 2,490 ft. S line, 150 ft. W line of Sur. 297 .....Location.

COLE POOL—DUVAL COUNTY

Magnolia Petroleum Co.'s (O'Hern & Seacord) No. 3-A Benavides, 330 ft. from SW line, 330 ft. from SE line, Blk. 12, Sur. 174 .....T. D. 2,848 ft.; sand 2,841-48 ft.; 15,000,000 ft. gas; 1,000 lbs. rock pressure.
Magnolia Petroleum Co.'s No. 4 Benavides, 150 ft. from NE line, 450 ft. from NW line, Blk. 28, Sur. 174 ....Rigging up to drill deeper; total depth 1,760 ft.

ROMA POOL—STARR COUNTY

The Texas Company's No. 5-A V. C. de Guerra, 675 ft. from N line, 675 ft. from E line, Share 305, Por. 67, Jurisdiction of Mier .....T. D. 3,670 ft.; sand 3,541-3,670 ft.; tested 7 joints oil and mud. considerable gas; setting 6⅝-in. at 3,541 ft.

MID-OJUELOS—WEBB COUNTY

O. W. Killam's No. 1 Garcia, 1,050 ft. from W line, 150 ft. from N line, Blk. 45, Ojuelos grant .....T. D. 2,013 ft.; abandoned.
O. W. Killam's No. 2 Garcia, 605 ft. S line, 150 ft. E line, Blk. 43, Los Ojuelos grant ....Derrick.

REISER POOL—WEBB COUNTY

O. W. Killam's No. 1 Killam (Villegas) on Blk. 4, Sur. 1,879 .....T. D. 2,906 ft.; abandoned.

CAROLINA-TEXAS POOL—WEBB COUNTY

George S. Marshall's No. 1 C. W. Webster, 810 ft. from S line, 150 ft. from W line, Sur. 684 .....T. D. 2,190 ft.; drlg.; tested sand 2,123-60 ft.; 15,000,000 ft. gas.

COLE FIELD—WEBB COUNTY

Alamo Drilling & Leasing Co.'s No. 2 Benavides, 660 ft. from N line, 660 ft. from E line, Blk. 16, Sur. 694...T. D. 2,300 ft.; shut down waiting on cement.
O. W. Killam's No. 1 Bruni, 200 ft. from NW line, 450 ft. from NE line, Sur. 10 .....T. D. 3,022 ft.; plugged and abnd.

CHARCO REDONDO POOL—ZAPATA COUNTY

C. R. Moore and J. W. Moore's No. 1 Adela G. de Flores, 330 ft. from NW line, 330 ft. from NE line, Doty Subd. .....T. D. 2,000 ft.; standing.
C. R. Moore and J. W. Moore's No. 2 Adela G. de Flores, 150 ft. from NE line, 150 ft. from SE line, Doty Subd. .....T. D. 150 ft.; standing.

JENNINGS-MARTINEZ-ZAPATA

South Texas Production Co.'s No. 1 Gutierrez, 2,000 ft. from E line, 660 ft. from NW line of Survey 162 .....T. D. 1,733 ft.; sand 1,728-38 ft.; test 625 lbs. gas through tester.

JENNINGS-MUCKLEROY POOL—ZAPATA COUNTY

Allied Oil & Gas Co.'s No. 12 Guiterrez, 750 ft. from NE line, 3,663 ft. from SE line, Share 4, Fansler Partition, Comitas grant .....T. D. 100 ft.; standing.
Nordan and Morris and Grimm and Yakey's No. 1 S Bustamente, 990 ft. from NE line, 150 ft. from NW line, Share 34, Fansler Partition, Comitas grant .....Derrick.
Pal-Mar Oil Co.'s No. 1 Jose Bustamente, 150 ft. from NW line, 150 ft. from SW line, Share 35, Fansler Partition, Comitas grant .....T. D. 355 ft.; standing
W. R. Shankle's No. 6 Guiterrez, 1,800 ft. from NE line, 2,989 ft. from NW line, Share 4, Fansler Partition, Comitas grant .....Derrick.
W. R. Shankle's No. 7 Guiterrez, 2,100 ft. from NE line, 2,898 ft. from NW line, Share 4, Fansler Partition, Comitas grant .....Location.
S. R. C. Oil Co.'s No. 1 Cuellar, 150 ft. S and W lines, Block 16, Sur. 62 .....Location.
S. R. C. Oil Co.'s No. 1 F. Cuellar, 300 ft. from S line, 300 ft. from W line, Blk. 6, Sur. 285.....Location.
S. R. C. Oil Co.'s No. 2 F. Cuellar, 300 ft. from S line, 300 ft. from E line, Blk. 8, Sur. 19 .....Location.
S. R. C. Oil Co.'s No. 10-A Cuellar, 150 ft. from NW line, 150 ft. from SW line, Blk. 10, Sur. 65 .....Spudded.
S. R. C. Oil Co.'s No. 9-B Cuellar, 660 ft. from SW line, 150 ft. from SE line, Blk. 7, Sur. 65 .....T. D. 200 ft.; drlg.
S. R. C. Oil Co.'s No. 2-D G. T. Montemayor, 150 ft. W line, 45 ft. S line, Block 8, Sur. 19 .....T. D. 1,308 ft.; completed for 100 bbls.
S. R. C. Oil Co.'s No. 3-C (12-B) Trevino .....Location.
Whicker, Arnold & Ahler's No. 3 Garza, 150 ft. from SW line, 450 ft. from SE line, Blk. 1, Zerro Ranch Subd., Comitas grant .....Rigging up.
J. W. Winch's No. 1 Bustamente, 450 ft. from NW line, 150 ft. from NW line, Blk. 7, Share 5, Fansler Partition, Comitas grant .....T. D. 1,251 ft.; sand 1,236-51 ft.; 600 ft. oil; csg. parted; standing.

JENNINGS-CUELLAR POOL—ZAPATA COUNTY

O. W. Killam's No. 1 Slator, Blk. 1, Slator Pasture, Borrego grant .....Spudded.
O. W. Killam's No. 32-B Cuellar, Sur. 277 .....T. D. 815 ft.; drlg.

MIRANDO VALLEY POOL—ZAPATA COUNTY

O. W. Killam's No. 1 Lopez, 181 ft. from W line, 150 ft. from S line, Blk. 16, Sur. 251 .....T. D. 1,736 ft.; drlg

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 48)

O'Neal & Catlett's No. 1 Pat Pugh .....Location; abandoned.
Hurlbut et al's No. 1 Mrs. D. Chestnut .....T. D. 4,732 ft.; shut down.
Walter Rawlins' No. 1 P. L. Campbell, C B.&B. Sur. .....T. D. 3,190 ft.; drlg.
E. S. Price's No. 1 Weiss, 200 ft. each way out of NW cor. of B.&B. Sur. .....T. D. 4,423 ft.; waiting for new drill stem.
E. S. Price's No. 2 Weiss, 900 ft. due SW of No. 1 Weiss, B.&B. Sur. .....T. D. 4,444 ft.; shut down.
E. S. Price's No. 3 Weiss, 900 ft. due NE of No 1 Weiss..Location.
Moody-Seagraves Producing Co.'s & Independent Oil & Gas Co.'s No. 1 Welder, 6,280 ft. from S line, 8,150 ft. from E line of Welder tract, Henry Eyles Sur. .....T. D. 502 ft.; set surface csg.
Cosden Oil Co.'s No. 1 Stoltzfus, 2,310 ft. S and E lines of Sec. 14, Rangley Subd. of C. Miller ranch, Uranga Sur. .....T. D. 4,478 ft.; coring.
Humble and Hurlbut et al's No. 1 J. C. Wood, 150 ft. from NW line, 1,144 ft. from SW line of P. T. Irrigation Co. ..... T. D. 5,077 ft.; standing.
The Texas Company's No. 1 McCampbell, 150 ft. from N and E lines of 161-ac. tract, R. Pena Sur. .....Location.
Simms Oil Co.'s No. 2 Holzmark, 660 ft. N and 20° E of No. 1, T. York Sur. .....Rigging up.
Rowan and Hope's No. 1 Goree, 600 ft. S, 300 ft. W, Lot 4, T. B. Barton Sur. .....Rigging up.

BEXAR COUNTY

Eckert & Son's No. 3 J. J. Brehm, 545 ft. from N line, 150 ft. from W line of lease, Sur. No. 58 .....Location.
Gatlin Oil Co.'s No. 2 I. A. Beck, 150 ft. from SE line, 2,551 ft. from SW line of lease, J. Montez Sur. .....Location.
Humble Oil & Ref. Co.'s No. 1 Ernest Lamm, near Elmendorf, southern part of county .....Moving in machinery
Long and Craig's No. 1 Sandemer ..... Location.
K. M. S Pet. Co.'s No. 1 E. Salicky, 132 ft. from E line, 10 ft. S line of tract, Blk. 15, Mission Gardens .....T. D. 1,070 ft.; drlg.
J. M. Russell's No. 1 F. L. Price, 1,500 ft. to N line, 660 ft W of tract in Angel Navarro Sur. ..... T. D. 206 ft.; changing rig
Snyder, Reeves et al's No. 2 Glasscock, 12 miles NE of San Antonio .....T. D. 500 ft.; drlg.
Weibacher et al's No. 1 Ernst, 6,400 ft. S line, 900 ft. W line of J. Christopher Sur. .....T. D. 720 ft.; shut down.

Penn Oil Co.'s No. 1 Kosub, 600 ft. N of NE cor. of Cooksey tract, then 700 ft. E on 175-ac. tract, J. Riall Sur. ..... T. D. 1,438 ft.; coring.
Somerset Syndicate's No. 1 Lagrange, 54 varas from S and W lines of Carrico tract, Sur. No. 48 ..... T. D. 375 ft.; shut down.
J. E. Westherall and Ben C. Hilman's No. 1 Talley ..... Location.
Russell and Moore's No. 2 Mills, 20 ft. S of No. 1, Angel Navarro Sur. ..... T. D. 1,040 ft.; drlg.; show oil 980-86 ft.
F. W. Togg's No. 1 Willie Sandemer, 150 ft. from NE and SE lines of the N 20 acres of Willie Sandemer 400-ac. tract, Juan Montez Sur. ..... Rigging up.
Bowman and Waldrop's No. 1 Ridder, 1,000 ft. from S and W lines of 688-ac. tract, J. M. Sur. ..... T. D. 1,034 ft.; reaming.

CALDWELL COUNTY

L. H. Wentz' No. 1 W. D. Myrick, 150 ft. W of CEL of 113-ac. tract, B. Lockhart Sur. ..... Location.
Callihan et al's No. 3 W. H. Callihan, 70 ft. N, 65 deg. E of No. 2 ..... T. D. 2,525 ft.; shut down.
Callihan et al's No. 4 W. H. Callihan, 2,000 ft. from N line, 1,945 ft. from W line of tract, John R. Miller Sur. ..... T. D. 2,520 ft.; drlg.
W. D. Anderson's No. 1 Vickery, 150 ft. from N line, 450 ft. from W line of farm, Damon Sur. ..... T. D. 300 ft.; drlg.
Cargil et al's No. 1 Thomas, 1,505 ft. from E line, 150 ft. from NE cor. of A. W. Jordan tract, J. Roberts Sur. ..... Rigging up.
Blount and Mills' No. 1 McMahan, 275 ft. from SW line, 75 ft. from SE line of 50-ac. tract, J. Pinchback Sur. ..... T. D. 1,050 ft.; mudded off gas; reaming 988 ft.

CALHOUN COUNTY

The Texas Company's No. 1 Thomas in the J. D. Tilly Sur. ..... T. D. 5,904 ft.; fishing for drill stem.

COLORADO COUNTY

Lewis Slagel Drilling Co.'s No. 1 Henderson, 990 ft. from W line, 2,310 ft. from S line, Sec. 1, Blk. 57, T.&P. Sur. ..... Location.

COMAL COUNTY

Caldwell & Lanier's No. 1 T. J. Byler, 175 varas from W line, 370 varas from N line of 320-ac. tract in the H.E.&W.T. No. 5,594 Sur. ..... T. D. 600 ft.; shut down for csg.
New Braunfels Oil & Gas Co.'s No. 1 Adolph Seidemann, 269 ft. to NE line, 470 ft. to NW line of farm in the A. M. Esneuricals 11-League Sur., 1 mile SE from New Braunfels ..... T. D. 2,524 ft.; dry and abnd.

DEWITT COUNTY

Penn Oil Co.'s No. 1 Junker, center N half 20-ac. tract, Pettus Sur. ..... T. D. 3,957 ft.; shut down.
H. T. Roe's No. 1 Leibhardt ..... T. D. 2,170 ft.; shut down.
A. H. Gibson et al's No. 1 Von Roeder, 750 ft. N line, 200 ft E line of farm, W. G. Hill League ..... T. D. 2,492 ft.; coring sandy lime.
Sheldon Petroleum Co.'s No. 1 Goehring, center of Goehring tract, H. Stubblefield Sur. ..... Location.

DUVAL COUNTY

Sloan et al's No. 1 Luby, SW cor. of Sur. 593 ..... Location; abandoned.
S. R. C. Oil Co.'s No. 1 Duval County Land Co., Sur. 280 ..... Rigging up.

EDWARDS COUNTY

Phillips Pet. Corp.'s No. 2 A. G. Holman, 320 ft. from N and E lines of SE of tract, C.C.S.D.&N.G.R.G. Sur. No. 25 ..... T. D. 6,325 ft.; fishing for bailer.
James Dalgish's No. 2 Peterson, 850 ft. N line, 1,100 ft. W line of Sec. 82, Blk. E in the H.E.&W.T. Sur. Location.
James Dalgish-Morrow's No. 1 Peterson, NW cor. Sec. 82, Blk. E, H.E.&W.T.R.R., NE cor. of county in the H.E.&W.T.R.R. Sur. ..... T. D. 4,775 ft.; drlg. white lime.

FALLS COUNTY

Marlin Oil Co.'s No. 1 Hodges ..... T. D. 1,200 ft.; shut down.

FRIO COUNTY

A. H. Wray's No. 1 Burns estate, 700 ft N, 330 ft. E of C Sec. 123, Antone Hupzor ..... T. D. 2,912 ft.; shut down.

GOLIAD COUNTY

A. G. Riemenschneider's No. 1 A. T. Fromme, 275 ft. from N line, 912 ft. W line of 300-ac. tract, P. Dexeter Sur. ..... T. D. 2,330 ft.; shut down.
Gibson Oil Co.'s No. 1 Cyrus Parks, 3,000 ft. S and 2,500 ft. E of NW cor. of Parks ranch, Ferguson Sur. ..... T. D. 4,456 ft.; drlg.
T. B. Slick's No. 1 Poetler, 1,500 ft. from SW line, 900 ft. from SE line of 591-ac. tract, Obid Marshall Sur. ..... T. D. 2,285 ft.; drlg.
Union Prod. Co.'s No. 29 Ray, 450 ft. from N, 275 ft. from W lines of A.B.&M. Sur. ..... T. D. 4,334 ft.; dry and abnd.

GONZALES COUNTY

Mardon Oil Co.'s No. 1 Robinson ..... T. D. 3,284 ft.; waiting for orders
United North & South Dev. Co.'s No. 1 Preston, 1,050 ft. NE, 450 ft. NW of upper S of SW cor. of Oethkin one-third league, 900 ft. SE of Preston No. 1 .... T. D. 2,368 ft.; abandoned.
Linden Petroleum Corp.'s No. 1 Hensley, 650 ft. from N line, 1,110 ft. from W line Hensley tract, J. Smith Sur.; reinstated ..... T. D. 4,811 ft.; plugged back to 4,785 ft.
A. J. Keiffer et al's No. 1 B. B. Dix, 550 ft. W of E line, 2,775 ft. N of S line (Guadalupe River) in the Ira Nash Sur., 4 miles SE from Darst Creek ..... T. D. 2,920 ft.; abandoned.
Andibus & Cummings' No. 1 R. D. & J. C. Miller, 523 ft. from S line, 1,000 ft. from E line, Ann Williams Sur. ..... T. D. 2,550 ft.; shut down.
Acme Oil & Royalty Corp.'s No. 1 H. K. Weber, 2,525 ft. from NW line, 2,250 ft. from SW line, Wright Sur. ..... T. D. 2,560 ft.; drlg.
United North & South Development Co.'s No. 1 Wells, 450 ft each way out of NW cor. of Wells tract, Johnson league ..... T. D. 3,500 ft.; drlg.

GUADALUPE COUNTY

J. S. Suttle's No. 2 A. Baenzinger, 40 ft. E line, 150 ft. S line of tract in the A. O. Mansola Sur., 5½ miles S from Seguin ..... T. D. 1,957 ft.; standing.
Ray Oil Co.'s No. 1 R. Felsing, 300 ft. NW line, 450 ft. NE line 120-ac. tract in the M. Baker Sur. ..... T. D. 900 ft.; shut down.
J. S. Suttle's No. 1 Wurzbach, 3,750 ft. from NW line, 2,450 ft. from NE line of Young Setton Sur. ..... T. D. 1,050 ft.; drlg.
O. K. Emerson's No. 1 C. A. Phillips, center of 80-ac. tract, Velda Sur. ..... Rigging up.
Jones and Erwin's No. 1 O. Forrester, 2,700 ft. from NE cor., 450 ft. from NW line, O. Forrester tract, Pate Sur. ..... T. D. 707 ft.; shut down.
Jones and Erwin's No. 1 Hoese, 150 ft. each way out of NE cor. of 200-ac. tract, J. Leal Sur. ..... T. D. 175 ft.; drlg.
Adams and Lyles' No. 1 Seligman, 150 ft. from E line, 300 ft. from S line of 462-ac. tract, John King Sur. ..... T. D. 2,270 ft.; drlg.

HAYS COUNTY

Hailey & Whittington's No. 1 Heidenrich, 4,900 ft. from NW line, 400 ft. from NE line of farm, Hemphill Sur. ..... T. D. 1,060 ft.; drlg
San Marcos Oil & Gas Co.'s No. 1 A. H. Alford ..... T. D. 513 ft.; waiting on cement.

JIM HOGG COUNTY

Cole Petroleum Co.'s No. 1 Allen, 150 ft. from W line, 336 ft. from N line, Blk. 7, Sur. No. 23 ..... T. D. 1,100 ft.; drlg.
Wm. H. Barnhart's No. 1 McCampbell, 450 ft. to W line, 150 ft. to N line, Lot 33, Barnhart Subd., Los Vibroitas grant ..... T. D. 2,005 ft.; temp. abnd.
E. E. Watts' No. 1 Gomez, 4,200 ft. to N line, 1,400 ft. to E line of Sur. 125 ..... T. D. 2,000 ft.; plugged back to 1,103 ft.
J. D. Pulliam's No. 1 Jones, 1,020 ft. W line, 1,020 ft. S line, Share 5-A Hinojosa Sur. ..... T. D. 1,602 ft.; standing.
P. H. Wilson's No. 1 Edds, Sur. No. 210 ..... Rigging up.

JIM WELLS COUNTY

J. Walsh et al's No. 1 W. D. Wade, 1,035 ft. NE line, 300 ft. NW line of N cor., Lot 1, Blk. C, W. H. Bode Sur. ..... T. D. 2,620 ft.; standing.
Prairie Lea Prod. Co.'s No. 1 Oppenheimer ..... Spudded and shut down.

KARNES COUNTY

J. F. Morrissey et al's No. 1 Rigsdale, 660 ft SW of C of NE line of 170-ac. farm in the McCoull Sur. ..... T. D. 2,000 ft.; standing.
Hurlbut et al's No. 1 Newberry, 450 ft. SE and SW line of Newberry 428-ac. tract, Carlos Martinez Sur. ... T. D. 2,975 ft.; shut down.

KENDALL COUNTY

Borgett et al's No. 1 Haag, W. Avery Sur. ..... T. D. 1,110 ft.; drlg. depth corrected.
Sitten et al's No. 1 Garvin, C of NE of D. L. Richardson Sur. in the D. L. Richardson Sur., 1 mile NE fom Kendalia ..... T. D. 900 ft.; drlg.
Dixon Oil Co.'s No. 1 Ottmer Behr, W of H.T.&B.R.R. Sur., 3½ miles SE from Sisterdale ..... T. D. 2,365 ft.; resumed drlg.
P. B. Sterling's No. 1 R. J. McCrocklin, 1,350 ft. from N line, 250 ft. from W line of the B. G. Owens Sur., 4 miles W from Kendalia ..... T. D. 1,554 ft.; drlg.
R. M. Perkins' No. 1 J. Lawhorn, Sec. 10, 2,475 ft. E line, 1,488 ft. S line ..... T. D. 705 ft.; fishing.
Permian Oil Co.'s No. 1 Boles, S.A.&M.G. Ry. Sur. No. 542½ ..... T. D. 1,065 ft.; set 10-in. csg.
Hardy Sitton's No. 1 McMillan, south central part of 180-ac. lease, B. Williams Sur. ..... Location.
Abercrombie Oil Co. and Harrison Oil Co.'s No. 1 Kuns, 900 ft. from E line, 1,900 ft. from S line of McCormack Sur. ..... T. D. 1,717 ft.; drlg

KERR COUNTY

Evans et al's No. 1 Love Ranch, 100 ft. from S line Sur. 1,597, 1,000 ft. E of W line of J. Martinez No. 1,594 Sur. ..... T. D. 2,780 ft.; drlg.

KINNEY COUNTY

Magnolia Pet. Co.'s No. 1 Whitehead-Wardlaw, 2,640 ft. W line and S line of Melton Valdez grant ..... T. D. 3,930 ft.; drlg. in black lime.
Mardon Oil Co.'s No. 2 Jim Clamp ..... T. D. 1,389 ft.; standing.

KIMBLE COUNTY

C. L. Bryant et al's No. 1 Lambert, 7,700 ft. N and W lines of F. Lotta Sur. ..... T. D. 850 ft.; drlg.
Kamon et al's No. 1 Hodges ..... Location.

LASALLE COUNTY

Fred W. Valz' No. 1 Coleman, 200 ft. from S and E lines of SW Sec. 514, B.S.&F. Sur. ..... T. D. 40 ft.; set casing.

LAVACA COUNTY

Newton Oil Co.'s No. 1 Reeves, cor. of S line of Reeves tract, John Huesser Sur. ..... T. D. 2,100 ft.; drlg.

LIVE OAK COUNTY

Jacob, Buzzini & Pickett, Inc.'s No. 1 C. E. Kay, in the Bridget Fadden Sur., 3 miles E from George West.... T. D. 915 ft.; shut down.
Penn Oil Co.'s No. 2 Lyne Bros., 1½ miles SW of No. 1. Rigging up.
Houston Oil Co.'s No. 3 Dunning, 330 ft. from NE line and 2,800 ft. from SE line of tract, M. B. Kilvin Sur.. Moving in derrick.
Houston Oil Co.'s No. 1 D. W. Snyder, 630 ft. from S line, 150 ft. from E line of Snyder tract, T. E. Garner Sur. ..... T. D. 3,620 ft.; reaming.
O. Stalley et al's No. 1 Nichols, 2,000 ft. from W line, 600 ft. from S line in the Ayers Sur. ..... Location; abandoned.
Illinois Exploration Synd.'s No. 1 Reeves-Brown, 1,300 ft. S of Sellers tract, 1,800 ft. E of Ry. ..... Derrick.
Sid Keoughan's No. 1 C. E. Terrell, 6,000 ft. from N line, 1,000 ft. from E line, Dan O'Boyle Sur. ..... T. D. 2,821 ft.; drlg.
Tul-Tex Oil Co.'s No. 1 L. Jacobs, 4 miles from N of Callihan Field ..... T. D. 1,440 ft.; sand 1,020-29 ft. showed 2,000,000 ft. gas, 800 ft. sulphur water; shut down.

LEE COUNTY

Burt et al's (M. D. Rickett) No. 1 R. C. Sanders ..... T. D. 3,124 ft.; shut down.
Marts and others' No. 1 Thomas ..... T. D. 650 ft.; drlg.
A. H. Wheeler and associates' No. 1 fee, Blk. 47, H. Donohue Sur. ..... T. D. 1,987 ft.; will drill deeper.

McLENNAN COUNTY

C. E. Groone and others' No. 1 League ..... Drlg. 932 ft.
W. L. Murrel and others' No. 1 Hixon ..... T. D. 775 ft.; shut down.

McMULLEN COUNTY

Mogul Pet. Co.'s No. 1 Martin, 150 ft. NW line, 150 ft. to SW line of E. Melon No. 212 Sur. ..... T. D. 632 ft.; drlg.
Sheree, Brodie and Emick's No. 1 Shiner, Henry Brewer Sur. ..... T. D. 112 ft.; set 10-in. csg.; show gas 85 ft.

MAVERICK COUNTY

Rycade Oil Corp.'s No. 6 Chittim, 1,445 ft. from S, 320 ft. from W of Sec. 7, I.&G.N. Sur. ..... T. D. 3,525 ft.; shut down.
Rycade Oil Corp.'s No. 5 Sullivan, in C of Sec. 82, Blk. 7, in the I.&G.N. Sur. ..... T. D. 7,092 ft.; trying to sidetrack junk.

MEDINA COUNTY

National Oil Co.'s No. 1 Howard, 1,750 ft. E of W line, 1,854 ft. N of S line of survey in the John George Sur. No. 9, 10 miles S of Dunlay ..... T. D. 1,657 ft.; standing; depth corrected.
Caldwell et al's No. 1 L. W. Burrell ..... T. D. 518 ft.; depth corrected.
Pat Armstrong's No. 1 Crawford, 1,389 ft. N line, 2,550 ft. E line of survey, 487.6 miles W of Devine ..... T. D. 2,720 ft.; coring.
United North & South Dev. Co.'s No. 1 Little, S from D'Hanis and near S line of county ..... T. D. 4,050 ft.; drlg.

MILAM COUNTY

Rheubotham & Tate's No. 1 Johnson, 325 ft. from N line, 250 ft. from W line of 40-ac. tract, D. Robinson Sur. ..... T. D. 1,475 ft.; shut down.
Kyser, Roberts & Dibble's No. 2 Ward ..... T. D. 1,600 ft.; shot with 20 qts. nitro to clear out junk.
Lloyd Oil Corp. and H. W. Elliott's No. 1 Davis ..... T. D. 1,300 ft.; drlg.
G. I. Moore's No. 1 Davis ..... T. D. 1,200 ft.; drlg.
Peggie Bros.' No. 1 M. Reed ..... T. D. 650 ft.; drlg.
Service Oil & Gas Co.'s No. 1 H. G. Henslee, 500 ft. from NW line, 400 ft. from NE line of 50-ac. tract, Valdez Sur. ..... T. D. 2,180 ft.; drlg.
Service Oil & Gas Co.'s No. 1 R. White, 650 ft. from NE line, 900 ft. from NW line of White tract, Levi Taylor Sur. ..... T. D. 1,010 ft.; drlg.

NUECES COUNTY

Grimm and others' No. 1 Wm. Baur ..... Location.
Hale & Hall's No. 1 Koenisch ..... Rigging up rotary.
Houston Oil Co.'s No. 1 Comstock, 105 ft. N of C of tract.. T. D. 3,650 ft.; drlg.
Houston Oil Co.'s No. 1 Joe Hunter, 607 ft. from W line, 165 ft. from S line, 75-ac. tract, Sec. 591 ..... Location.
Bowen et al's No. 1 Theo Prieur ..... Spudded.
Pearson Properties, Inc.'s No. 1 State National Bank .. T. D. 3,640 ft.; coring sandy shale.
Calallen Oil & Gas Co.'s No. 2 Allen, 800 ft. from E line, 1,100 ft. from S line, Blk. 76, Garias Sur. ..... T. D. 1,630 ft.; drlg.
H. H. Weinert's No. 1 Mohle, 450 ft. from S line, 450 ft. from W line, Sec. 94, Bishop Subd., Palo Alto lands ..... T. D. 452 ft.; set casing.

REAL COUNTY

McGinley Corp.'s No. 1 Haby, C of SW Sec. 175 ..... T. D. 640 ft.; shut down.

SAN PATRICIO COUNTY

J. L. Kennedy's No. 1 McRae, 1,170 ft. NW of the C of the SE line of 500-ac. tract ..... T. D. 2,152 ft.; shut down.
George B. Pickett's No. 1 Baldwin, 900 varas due E of Denton, 1,200 ft. S of the SE cor. of O'Neil Sur., Abstract 211 ..... T. D. 4,020 ft.; shut down.
Cosden Oil Co.'s No. 1 Ramsey, 3,000 ft. from N line, 4,500 ft. from E line, Portillo Sur. ..... T. D. 1,220 ft.; drlg

Union Prod. Co.'s No. 4 Welder, 3,000 ft. N line, 4,500 ft. E line of tract in the E. Portillo Sur. ..... T. D. 5,893 ft.; cored shale.
G. B. Peterman et al's No. 1 Crow, 150 ft. from S line, 170 ft. from W line of Sec. 24 of the Fulton-Coleman Pasture Lands, J. H. Paul Subd. ..... T. D. 4,096 ft.; temp. abnd.
G. B. Peterman et al's No. 1 Foster, 150 ft. from E line, 1,420 ft. from N line of Blk. 5 of the Welder-Coleman-Fulton Subd., 3½ miles W from Sinton ..... Location.
LaFeria Oil & Gas Co.'s No. 1 C. C. Smith, in J. C. White Sur., 690 ft. to N line, 350 ft. to E line ..... T. D. 4,067 ft.; shut down.
Cosden Oil Co.'s No. 1 Powell, 330 ft. E line of 36-ac. tract in Sec. 32, Paul Subd., Coleman-Fulton Pasture Lands ..... T. D. 4,348 ft.; coring.

STARR COUNTY

J. L. Smith's No. 1 Welch, Perdernal Sur. ..... T. D. 1,192 ft.; dry and abnd.
Virginia Oil Co.'s No. 1 Kelsey-Bass, 150 ft. to S line, 1,850 ft. to W line, Blk. 6, Por. 75, Courago ..... T. D. 377 ft.; sand 371-77 ft.; 4,000,000 ft. gas.

TRAVIS COUNTY

Fort Bend Oil Co.'s No. 1 Engleman, 450 ft. N line, 150 ft. W line of 108-ac. tract, J. H. Denson Sur .... T. D. 385 ft.; shut down; depth corrected.
Sun Oil Co.'s No. 1 Nagle ..... Derrick.
Allen et al's No. 1 Sophie Smith ..... Building derrick.

UVALDE COUNTY

Phantom Oil Co.'s No. 1 Claudt, Sec. 611 ..... T. D. 2,710 ft.; shut down.
Waldrop & Welch's No. 1 E. R. Edmonds, 1,750 ft. NW, 7,200 ft. W of Sec. 71, in the A. Gomez Sur. 8 miles S of Uvalde ..... T. D. 1,610 ft.; shut down.

VICTORIA COUNTY

Newton and others' No. 1 West ..... T. D. 1,550 ft.; drlg.
The Texas Co.'s No. 1 A. M. McFadden, 1,550 ft. N and E lines of H. Bonny Sur. ..... T. D. 5,935 ft.; drlg.

WILSON COUNTY

Rycade Oil Corp. and Getty Petroleum Co.'s No. 1 J. A. Johnson, 150 ft. from N line, 600 ft. E of railroad tract, Jose de Balmaseda Sur. ..... Rigging up.
Stover and Wren's No. 1 John Reuss, 10,400 ft. from SW line, 2,300 ft. from NW line, O. A. Trevino Sur. No. 19 ..... Spudded.

ZAPATA COUNTY

T. H. Ward's No. 1 Uribe, 150 ft. NW line, 150 ft. SW line, Blk. 8 Subd., Share 7, Partition No. 6, T. Uribe Partition of Jose V. Borrego Sur. ..... Rigging up.
John Poppas Pool, Inc.'s No. 1 Flores, 2,977 ft. SE line, 6,000 ft. Rio Grande River, Porcion 35 ..... Rigged up.
B. F. Nixon's No. 1 A. Guiterrez, 170 ft. S line, 332 ft. E line, Lot 5, Blk. 8, Partition 10, Borrego grant ... T. D. 50 ft.; standing.
Penny Prod. Co.'s No. 1 Juan V. Cuellar, Jr., et al, 175 ft. NE line, 175 ft. SE line Poppas Subd., Porcion 33 and 34, Blk. 1, Sur. 2 ..... T. D. 1,760 ft.; drlg.
National Oil Co.'s No. 1-A Adams, 150 ft. N of No. 1, Blk. 4, Sec. 11, Adams Subd., Borrego grant ..... T. D. 1,740 ft.; dry and abnd.
National Oil Co. of Delaware's No. 1 Luther 617 ft. NW line, 96 ft. NE line, Blk. 97, Da Prom Subd., Porcion 6 ..... T. D. 380 ft.; standing.
Mackenzie and Tallmadge's No. 1 Trevino, 400 ft. SE line, 200 ft. NE line, Blk. 6, Sur. No. 4, Porcion 2 and 2 ..... T. D. 203 ft.; drlg.
F. M. Blair & Son's No. 1 Guiterrez, 150 ft from NW line, 660 ft. from SW line, Blk. 2, Blair Subd., Comitas grant ..... T. D. 1,750 ft.; standing.
Lincoln Oil & Gas Co.'s No. 1 Guiterrez, Blk. 23, Subd., La Huerta grant ..... T. D. 1,150 ft.; standing.
J. J. O'Hern's No. 1 S. Benavides, 150 ft. from NW line, 150 ft. from NE line, Blk. 10, Fansler Subd., Villa grant ..... T. D. 1,041 ft.; drlg.

ZAVALA COUNTY

Ed Anglin's No. 6 La Pryor ..... Location.
Carl Cromwell's No. 1 Whitecotton, C of NW Sec. 1, A.P.&M. Sur. ..... Location.
Ed Anglin's No. 1 Matthews, 118 varas from S and W lines of Sec. 4, Blk. 2, L&G.N. Sur. ..... T. D. 1,101 ft.; drlg.
Texas Gas Utilities Co.'s No. 2 Pryor, 900 varas W, 1,108 varas S of Anglin's No. 3 Pryor ..... T. D. 1,960 ft.; shut down.
F. W. Weigand's No. 1 Gates, 1,320 ft. from N line, 220 ft. from NE cor., Sur. No. 13 ..... T. D. 3,115 ft.; reaming.

LOUISIANA-ARKANSAS PROVEN AREAS

(Rotary operations unless otherwise designated.)

(Continued from Page 46)

CADDO PARISH—GREENWOOD

Calatex O. & G. Co.'s No. 1 Edgar, 1,460 ft. S, 1,900 ft. E, NW cor., Sec. 17-16-16 ..... Location.
Calatex O. & G. Co.'s No. 1 McAnn-Alfred, 1,310 ft. S, 970 ft. E, NW cor., Sec. 17-16-16 ..... Location.

CADDO PARISH—HOSSTON

Bayou State Oil Corp.'s No. 5 Barr, Sec. 30-22-15 ..... Began drlg. Nov. 7; cmtd. 10-in. 42 ft; drlg. 800 ft

CADDO PARISH—OIL CITY

The Texas Co.'s No. 73 Levee Board, 1,642 ft. E, 780 ft. N, SW cor. SW SE, Sec. 27-21-16 ..... Location.
The Texas Co.'s No. 74 Levee Board, 1,600 ft. S, 200 ft. W, NE cor., Sec. 33-21-16 ..... Derrick.
The Texas Co.'s No. 75 Levee Board, 2,450 ft. S, 224 ft. W, NE cor., Sec. 33-21-16 ..... Derrick.

CADDO PARISH—PINE ISLAND

Shreveport Oil Corp.'s No. 1-A Muslow, 150 ft. S, 150 ft. E, NW cor., Sec. 32-21-15 ..... D.S. test 2,190 ft; dry; arranging to plug back.
Tholl Oil Co.'s No. 13 Bashara, 75 ft. N, 300 ft. W, SE cor., Sec. 23-21-15 ..... Cmtd. 6-in. 1,402 ft.

CLAIBORNE—HOMER

La. Oil Ref. Corp.'s No. 10 Langston, 660 ft. S, 528 ft. E, NW cor. SW SW, Sec. 19-21-7 ..... Rig up.

CLAIBORNE PARISH—SUGAR CREEK

Triangle Drlg. Co.'s No. 1 Brownfield, 660 ft. S, 660 ft. E, NW cor. NE, Sec. 6-19-5 ..... D.S. stuck; T.D. 4,049 ft.
Triangle Drlg. Co.'s No. 1 J. W. Stevenson, 670 ft. N, 665 ft. W, SE cor. SW SE, Sec. 6-19-5 ..... Cmtd. 9-in. 4,060 ft.

DE SOTO PARISH—HOLLY

Standard Oil Co.'s No. 1-B Dowling Bros., 200 ft. N, 396 ft. W, SE cor. SW SW, Sec. 32-14-13 ..... Began drlg. Nov. 7; cmtd. 10-in. 70 ft; drlg. 660 ft.

LA SALLE PARISH—URANIA

Montugu Oil Co.'s No. 9 Zenoria Lbr. Co., 660 ft. W, 200 ft. S, NE cor., Sec. 10-9-1e ..... Began drlg. Oct. 15; cmtd. 10-in 103 ft., 6-in. 1,491 ft; W.O.S.R 1,508 ft.
Montugu Oil Co.'s No. 10 Zenoria Lbr. Co., 160 ft. S, 160 ft. E, NW cor., Sec. 11-9-1e ..... Derrick.

MOREHOUSE PARISH

Bahan & Bahan's No. 4 Feazel, 900 ft. W, 330 ft. S, NE cor., Sec. 2-20-4 ..... Location.
La. G. & F. Co.'s No. 3 Sandige (was Industrial Gas Co.'s), 560 ft. N, 660 ft. E, SW cor. SE, Sec. 15-20-4 ... Cmtd. 6-in. 2,093 ft.
Texas-La. Prod. Co.'s (was Moody-Seagraves Gas Co.'s) No. 1 Fisher, 660 ft. E, 3,814 ft. N, SW cor., Sec. 34-21-5 ..... D.S. test 2,393 ft; dry; coring 2,-401 ft.

OUACHITA PARISH

Bahan & Bahan's No. 1 Fabolio, 660 ft. S, 660 ft. W, NE cor., Sec. 35-19-3 ..... Location.
La. G. & F. Co.'s No. 4 fee (was Industrial Gas Co.'s), 1,324 ft. N, 652 ft. W, SE cor., Sec. 2-19-3 ..... Rig up.
Jordan Drlg. Co.'s No. 7 Cole, 365 ft. S, 1,459 ft. W, NE cor., Sec. 49, in Sec. 50-18-4 ..... Drlg. 1,800 ft.
Jordan Drlg. Co.'s No. 1 School, 216 ft. S, 244 ft. W, NE cor. NW, Sec. 16-18-4 ..... Began drlg. Oct. 28; cmtd. 12½-in. 180 ft; drlg. 1,050 ft.
Pipes & Mack's No. 1 Robertson & Reed, 990 ft. W, 330 ft. S, NE cor. SE, Sec. 10-18-4 ..... Began drlg. Nov. 5; cmtd. 12½-in. 181 ft; 8-in. 841 ft; drlg. 1,-891 ft.
Pipe & Mack's No. 2 Union Gas Products Co., 296 ft. W, 528 ft. N, SE cor. SW, Sec. 7-18-5 ..... Location.
United Carbon Co.'s No. 6 Spade, 1,180 ft. S, 140 ft. E, NW cor., Sec. 27-19-4 ..... Location.

RICHLAND PARISH

W. C. Feazel's No. 1 R. B. Simon, 2,406 ft. W, 2,020 ft. S, NE cor., Sec. 11-16-6 ..... Rig moved; derrick.
Franklin O. & G. Co.'s No. 1 Thompson, 660 ft. N, 165 ft. W, SE cor. NE, Sec. 14-16-6 ..... Location.
Hope Prod. Co.'s No. 1 Thomason, 1,980 ft. N, 660 ft. E, SW cor., Sec. 14-16-6 ..... Cmtd. 6⅝-in. 2,285 ft.
La. G. & F. Co.'s No. 1-A Noble, 1,320 ft. N, 530 ft. W, SE cor. NE, Sec. 35-16-5 ..... Cmtd. 6-in. 2,300 ft.
Palmer Corp.'s No. 1 Holdiness, 552 ft. S, 2,215 ft. W, NE cor., Sec. 8-16-6 ..... Rig up.
Palmer Corp.'s No. 12 Rhymes-England, 1,320 ft. W, 660 ft. N, SE cor. NW, Sec. 33-17-6 ..... Drlg. sand 2,402 ft.
Palmer Corp.'s No. 13 Rhymes-England, 561 ft. W, 66 ft. N, SE cor., Sec. 29-17-6 ..... Cmtd. 6-in. 2,300 ft.
Southern Carbon Co.'s No. 1 J. A. Clements, 1,320 ft. S, 1,980 ft. W, NE cor., Sec. 10-16-6 ..... Drlg. 2,230 ft.
Southern Carbon Co.'s No. 1-B Hale, 1,320 ft. N, 660 ft. E, SW cor., Sec. 15-16-6 ..... Location.
Southern Carbon Co.'s No. 1-C Hemler, 1,164 ft. S, 888 ft. W, NE cor., Sec. 14-16-6 ..... Cmtd. 12-in. 190 ft; 8-in. 914 ft; drlg. 945 ft.
Southern Carbon Co.'s No. 1-D M. and M. McCoy, 1,980 ft. S, 660 ft. W, NE cor., Sec. 30-16-6 ..... Location.
Southern Carbon Co.'s No. 7 F. B. and E. A. Sartor, 2,540 ft. S, 660 ft. E, NW cor., Sec. 17-16-7 ..... Location.
Southern Carbon Co.'s No. 1-C Thomason, 1,980 ft. N, 1,400 ft. W, SE cor., Sec. 14-16-6 ..... Cmtd. 6-in. 2,285 ft.
Southern Carbon Co.'s No. 1-E Thomason, 3,300 ft. S, 100 ft. E, NW cor., Sec. 32-16-6 ..... Location.
State Line O. & G. Co.'s No. 1-A Boughton, 1,883 ft. E, 127 ft. S, NW cor. SW, Sec. 33-16-6 ..... Cmtd. 6-in. 2,300 ft.
State Line O. & G. Co.'s No. 1 Hewitt, 1,721 ft. S, 957 ft. E, NW cor. SW, Sec. 32-16-6 ..... Rig up.
United Carbon Co.'s No. 1 J. A. Hemler, 660 ft. W, 66 ft. N, SE cor., Sec. 5-16-6 ..... Cmtd. 8-in. 914 ft; drlg. 1,130 ft.
United Carbon Co.'s No. 2 C. M. Noble, 805 ft. W, 1,498 ft. N, common cor. Secs. 7, 8 and 38-15-16 in Sec. 37 . Drlg. 2,260 ft.

SABINE PARISH—PLEASANT HILL

F. A. Bartlett, Jr.'s No. 1 Logan, 200 ft. S, 200 ft. E, NW cor., Sec. 27-10-12 ..... Drlg. 2,614 ft.

SABINE PARISH—ZWOLLE

W. M. Coates' No. 1 Sabine Lbr. Co., 424 ft. N, 424 ft. E, SW cor. NW SW, Sec. 1-7-12 ..... Drlg. shale 2,165 ft.
Tom Davis' No. 1 Holliday (was T. D. Allison's), Sec. 31-8-12, Zwolle Townsite ..... S.D. wtr. 1,350 ft.
F. M. Hood's No. 1-B Winston (was No. 2), 700 ft. E, 425 ft. S, NW cor., Sec. 31-8-12, Zwolle Townsite ..... S.D. 1,065 ft.
Ab Jones et al's No. 1 Ferguson, 330 ft. N, 330 ft. W, SE cor. NE SW, Sec. 33-8-12 ..... Rig up.
Loring Oil Co.'s No. 1 Middleton, 200 ft. E, 200 ft. S, NW cor. NE SE, Sec. 26-8-12 ..... D.S. test 2,388 ft; dry; W.O. 2,-650 ft.
Loring Oil Co.'s No. 2 Middleton, 330 ft. W, 175 ft. S, NE cor. NE SE, Sec. 26-8-12 ..... D.S. test 2,440 ft; dry; drlg. 2,-450 ft.
Pelican Nat. Gas Co.'s No. 6 La. Long Leaf Lbr. Co., 200 ft. N, 200 ft. W, SE cor. NW SW, Sec. 4-7-11 .... Began drlg. Nov. 7; cmtd. 12-in. 103 ft; drlg. 829 ft.
H. W. Perritt, trustee's No. 1 Bowman-Hicks, 330 ft. N, 330 ft. W, SE cor. SW, Sec. 2-7-12 ..... S.D; wtr. 1,700 ft.
Standard Oil Co.'s No. 1 Bowman-Hicks, 330 ft. N, 330 ft. E, SW cor. SW NW, Sec. 25-8-12 ..... Top marl 2,306 ft; cmtd. 6⅝-in. 2,368 ft.
Tarver et al's No. 4 Sabine State Bank, 230 ft. W, 270 ft. N, C, Sec. 26-8-12 ..... D.S. test 2,738 ft; dry; drlg. chalk 2,830 ft.
C. H. Teat et al's No. 1 Craig, 300 ft. N, 300 ft. E, SW cor. NE NE, Sec. 25-8-12 ..... Cmtd. 6⅝-in. 2,310 ft; S.W; small show oil 2,450 ft; bailing to test 2,530 ft.
The Texas Co.'s No. 1 Maines et al, 990 ft. S, 330 ft. W, NE cor. SE, Sec. 5-7-11 ..... Began drlg. Nov. 7; cmtd. 10-in. 103 ft; drlg. 1,995 ft.
Wheatcroft et al's No. 1 Sabine Lbr. Co., SW NE, Sec. 31-8-12 ..... S.D. 2,495 ft.

SABINE PARISH—BLUE LAKE

R. L. Gay's No. 8 Bowman-Hicks, Sec. 18-7-13 ..... Recmtd. back to 2,392 ft; old T.D. 2,552 ft.
R. L. Gay's No. 9 Bowman-Hicks, 330 ft. N, 330 ft. W, SE cor. NE SW, Sec. 18-7-13 ..... Cmtd. 6⅝-in. 2,187 ft.

UNION PARISH

Bahan & Bahan's No. 1 Barr, 233 ft. S, 833 ft. E, NW cor., Sec. 16-20-4 ..... Location.
E. S. Hall's No. 5 Spencer, 1,980 ft. E, 600 ft. N, SW cor., Sec. 14-20-3 ..... Cmtd. 6-in. 2,076 ft.
La. G. & F. Co.'s No. 12 Smith (was Ouachita Nat. Gas Co.'s), 2,152 ft. N, 708 ft. E, SW cor., Sec. 20-20-4 ..... Location.

WEBSTER PARISH—SAREPTA AND SHONGALOO

Magnolia Pet. Co.'s No. 3 Denman, 369 ft. S, 513 ft. W, NE cor. NE NW, Sec. 1-22-11 ..... Swbng. 1,000 ft. fluid; 10-ft. sand 2,741 ft.

ARKANSAS

JOHNSON COUNTY

Ark.-La. P. L. Co.'s No. 1 Hudson et al, 660 ft. N, 545 ft. E, SW cor. SE NE, Sec. 14-10-24 ..... Drlg. hard sand 1,370 ft.
Ark.-La. P. L. Co.'s No. 1 Mattie Kelly, 330 ft. S, 657 ft. E, NW cor. SW SW, Sec. 14-10-24 ..... Drlg. shale 2,360 ft.
River Valley Gas. Dev. Co.'s No. 1 W. F. Collier, 350 ft. S, 330 ft. E, NW cor. SE SE, Sec. 21-9-25 ..... Location.

OUACHITA COUNTY—SMACKOVER

L. H. Hamilton's No. 3 Doyle, 100 ft. E, 400 ft. N, SW cor. SE SE, Sec. 23-15-16 ..... Drlg. 1,000 ft.

SEBASTIAN COUNTY

Ozark Nat. Gas Co.'s No. 10 Weaver, 660 ft. N, 660 ft. W, SE cor. SE NE, Sec. 27-8-30 ..... Straightening hole; T.D. 2,640 ft.

UNION COUNTY—CHAMPAGNOLLE

Lion Oil Ref. Co.'s No. 1 Sullivan, 330 ft. N, 330 ft. W, SE cor. SE NW, Sec. 12-17-14 ..... Cmtd. 10-in. 150 ft; drlg. 1,505 ft.
Lion Oil Ref. Co.'s No. 2 Sullivan, 933 ft. S, 200 ft. W, NE cor. NE NW, Sec. 12-17-14 ..... Began drlg. Nov. 8; cmtd. 10-in. 149 ft.
Ohio Oil Co.'s No. 10 Crain, 330 ft. S, 330 ft. W, NE cor. SE SW, Sec. 1-17-14 ..... Began drlg. Nov. 6; cmtd. 10-in. 186 ft; drlg. 1,300 ft.

UNION COUNTY—EL DORADO

Malloy & Co.'s No. 7 Burns, SW cor. NW NW, Sec. 31-17-15 ..... Pulling tubing; T.D. 2,213 ft.
Rice Drlg. Co.'s No. 1 Watley, 150 ft. S, 150 ft. E, NW cor. SW, Sec. 7-17-15 ..... Drlg. 1,180 ft.
Weisinger & Boll's No. 8 Goodwin, 175 ft. N, 150 ft. E, SW cor. NE NW, Sec. 6-18-15 ..... W.O.S.R; to drill in with cable tools, 2,112 ft.

BACKGROUND

When The Exchange National Bank of Tulsa came into existence the oil industry was struggling with difficulties now forgotten. That was the day of the lost hole, inadequate tools, impassable roads, the team and wagon . . . and the day of difficult financing.

Time has pushed these obstacles into the dimness of a colorful background . . . a background that tried the fibre of men and institutions, and a background of which The Exchange National was distinctly a part.

The Exchange National Bank of Tulsa takes pride in the fact that it assumed, at a time that required both foresight and courage, the responsibilities of Credit Sentry of The Oil Fields; it has always shared the industry's problems, has grown up with the industry, and has emerged from that background to gain international recognition as The Oil Bank of America.

THE EXCHANGE NATIONAL BANK OF TULSA

EAST TEXAS
HARRISON COUNTY

Calatex O. & G. Co.'s No. 6 Argus, 755 ft. N, 699 ft. W, Mile Post 27, in J. Womack Sur. ..... Location.
Shell Rock Pet. Co.'s No. 1 Oliver Dougherty, W. D. Burris Sur. ..... S.D. brown chalk 3,520 ft.

PANOLA COUNTY

Ark.-La. P. L. Co.'s No. 2-A G. W. Brumble, 477 ft. W, 473 ft. S, NW cor. Jno. Womack Sur., in B. C. Jordan Sur. ..... Drlg. lime 4,202 ft.
W. G. Banks et al's No. 1 C. O. Baldwin, 1,395 ft. W, 1,362 ft. S, NE cor. Baldwin 290 ac. in Hampton West Sur. ..... Rig up.
S. E. Bell et al's No. 1 Burnett Lbr. Co., C, S. B. Hendricks Sur. ..... Drlg. lime 2,454 ft.
Creighton & Hart's No. 1 Greeny-Kyle, C, Greeny-Kyle 60 ac., Jas. Tippett Sur. ..... Reaming to bottom; T.D. 3,045 ft.
Texas-La. Prod. Co.'s No. 1 Baker, 1,000 ft. N, 550 ft. W, SE cor., 63-ac. Baker tract, in B. C. Jordan Sur. Drlg. hard chalk 1,585 ft.
Knox et al's No. 1 Dunham (was Jackson et al's), 150 ft. W, 150 ft. N, SE cor. M. I. Dunham 29 ac., in Chas. Haley Sur. ..... Small show oil; cmtd. 6⅝-in. 2,670 ft; T.D. 2,732 ft.
Nat. Gas Prod. Co.'s No. 1 H. H. Alvord, 6,777 ft. S. 6,162 ft. E, NW cor., B. C. Jordan Sur. ..... Began drlg. Nov. 6; cmtd. 15½-in. 40 ft; drlg. 400 ft.
Doris Thomason's No. 15 Crenshaw, 1,992 ft. S, 2,305 ft. E, SW cor., Jno. Womack Sur. in B. C. Jordan Sur... Derrick.

MISSISSIPPI
RANKIN COUNTY

Feazel O. & G. Co.'s No. 1 Cox, SE cor. SE SE. Sec. 12-5-1e ..... Derrick.
Gulf Ref. Co.'s No. 1 Hamilton, 1,320 ft. N, 1,320 ft. E. SW cor., Sec. 12-5-1e ..... D.S. test 2,625-40 ft; 700 ft. S.W. coring 2,720 ft.
Dr. S. D. Raymond's No. 1 Graves, 1,810 ft. N, 3,210 ft. W, SE cor., Sec. 12-5-1e ..... Cmtd. 6⅝-in. 2,383 ft.
Southern Pet. Co.'s No. 1 Ivey, SE. Sec. 12-5-1e ..... Derrick.
Wallace Oil Co.'s No. 1 Cobb, SW cor. SE NE, Sec. 12-5-1e ..... Began drlg. Nov. 5; cmtd. 12½-in. 83 ft; drlg. shale 1,650 ft.

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Rotary operations unless otherwise designated.)

(Continued from Page 46)

NE cor., Sec. 27-20-8 ..... S.D. 2,200 ft.
Prairie O. & G. Co.'s No. 1 Shackelford, 331 ft. S, 327 ft. E, NW cor. SE NE, Sec. 30-22-5 ..... Rig up.

CONCORDIA PARISH

Joe Marr et al's No. 1 Maxwell, C, Sec. 35-3n-8e ..... Drlg. 3,420 ft.

DE SOTO PARISH

Ark.-La. P. L. Co.'s No. 3 Johnson, 1,980 ft. N, 1,320 ft. W, SE cor., Sec. 1-11-14 ..... Show gas 2,985 ft; D.S. test 2,930-85 ft; S.W; drlg. hard sand 2,990 ft.
J. W. Clark's No. 1 Tidwell, 250 ft. S, 250 ft. E, NW cor. NW, Sec. 22-13-14 ..... D.S. test; small S.O. and G. 2,950 ft; dry; coring 3,075 ft.
S. A. Guy's No. 1 Dowling Bros., 469 ft. E, 382 ft. S, NW cor. NE, Sec. 31-14-14 ..... S.D; sandy shale 1,354 ft.
Bud Harrell's No. 1 Horton, 450 ft. E, 150 ft. N, SW cor., Sec. 4-11-11 ..... S.D. 1,060 ft.
Holly Oil Co.'s No. 1 Talbot (was Philp et al's), 220 ft. S, 730 ft. W, NE cor. NW NE, Sec. 9-13-13 ..... Reaming to bottom; T.D. 2,895 ft.
Keatchie O. & G. Co.'s No. 1 Hallie Smith (was H. E. Weichert's), NE SE, Sec. 31-14-15 ..... D.S. test 1,470 ft; dry; drlg. 1,580 ft.
C. D. Neff et al's No. 1 H. P. Dowling, 240 ft. N, 340 ft. W, SE cor., Sec. 18-13-14 ..... Began drlg. Nov. 6; cmtd. 10-in. 42 ft.

NATCHITOCHES PARISH

W. M. Coats' No. 1 Collins, 730 ft. N, 50 ft. E. C, Sec. 28-9-10 ..... S.D. 3,600 ft.
J. W. Cooper et al's No. 1 Cooper, NW SW, Sec. 35-11-10.. S.D. chalk 1,557 ft.
Cooper et al's No. 2-A Cooper, C SE SE, Sec. 32-11-10.... Fishing 600 ft; D.S; T.D. 1,150 ft

RED RIVER PARISH

Lucky Strike Oil Co.'s No. 1 Chaffraix, 200 ft. S, 200 ft. E, C, Sec. 33-12-10 ..... Coring 2,860 ft.
T. G. Shaw's No. 1 Wilkerson, 460 ft. N, 200 ft. W, SE SE, Sec. 4-12-10 ..... Bailer stuck with 700 ft. 38.5° oil in hole; T.D. 2,838 ft.

RICHLAND PARISH

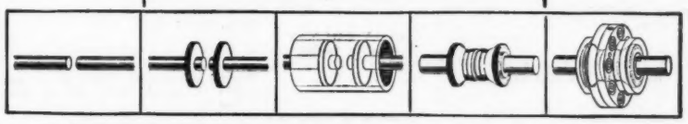
Alto Gas Co.'s No. 2 Hunt, 660 ft. S and E. NW cor., Sec. 13-17-5 ..... Derrick.
W. C. Feazel's No. 1 Landrum, 620 ft. N, 4,573 ft. E, SW cor., Sec. 6-16-17 ..... Derrick.
Island Gas Co.'s No. 1 Noe, 1,902 ft. N. 660 ft. W. SE cor., Sec. 3-16-5 ..... Top Monroe gas rock 2,365 ft bailed dry 2,419 ft. and 2,460 ft. D.S. test 2,479 ft., 2,509 ft. and 2,539 ft; S.W; 2,560-96 ft. S.W; S.D. 2,630 ft.
Pelican Nat. Gas Co.'s No. 1 Faust Bros., 1,980 ft. E, 660 ft. N, SW cor. NW, Sec. 13-17-5 ..... Cmtd. 8-in. 820 ft.

SABINE PARISH

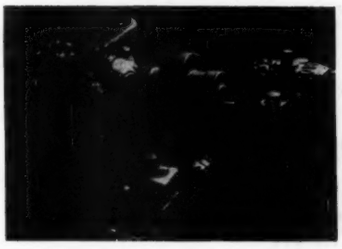
Boone trustee's No. 1 Turner, 40 ft. N. 140 ft. W. SE cor. NW NW, Sec. 4-7-11 ..... Rig up.
J. W. Clark's No. 1 Lites, 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 34-8-11 ..... Derrick.
Tom David's No. 1 Smith, 460 ft. N, 200 ft. W, SE cor. SE SE, Sec. 27-8-10 ..... Cored 10-ft. wtr. sand 1,550 ft.; S.D.
Eylers O. & G. Co.'s No. 1 Frazier, 330 ft. S, 330 ft. W, NE cor. NW SW, Sec. 10-8-11 ..... Began drlg. Nov. 1; S.D. 30 ft.
Franks et al's No. 1 Dew, 200 ft. N, 300 ft. E, SW cor. SE, Sec. 22-8-11 ..... S.D. wtr. 1,225 ft.
R. L. Gay, tr.'s No. 1-A Sabine Lbr. Co., 212 ft. S, 170 ft. E, NW cor. SE NW, Sec. 1-7-12 ..... Rig up.
Lacy Jessup Oil Co.'s No. 1 Brown Lbr. Co. (was Lacey et al's), C NW NE, Sec. 28-8-10 ..... Drlg. 1,225 ft.
Lacey Prod. Co.'s No. 1 Cooper, 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 30-8-11 ..... Rig up.
Lacey Prod. Co.'s No. 2 Cooper, 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 32-8-12 ..... Derrick.
Lide et al's No. 1 Ponder, 990 ft. N, 990 ft. W, C, Sec. 15-7-11 ..... Top marl 2,395 ft; cmtd. 6-in. 2,385 ft; T.D. 2,407 ft; tested dry 2,412 ft; 100 ft. oil in hole from 2,422 ft; D.S. test dry; show oil and gas 2,800 ft; tested dry.
D. M. Lide's No. 1 Sabine Lbr. Co., 330 ft. S, 330 ft. E, NW cor., Sec. 12-7-12 ..... Location.
Lohman & Walker's No. 1 Hubley, 330 ft. N, 330 ft. W, SE cor. SE NE, Sec. 21-7-11 ..... Top marl 2,461 ft; cmtd. 6-in. 2,465 ft; tested dry 2,490 ft; C.O.
Lohman et al's No. 1 Wyatt Lbr. Co., 150 ft. S, 330 ft. E, NW cor. NE SW, Sec. 18-4-11 ..... Rig up.
Longoria et al's No. 1 Belton, 330 ft. S, 330 ft. E. C. NE, Sec. 31-9-13 ..... Rig up.
Loring Oil Co.'s No. 13 Bowman-Hicks, 340 ft. N, 220 ft. W, SE cor. SW SE, Sec. 2-7-12 ..... Drlg. 2,450 ft.
Magnolia Pet. Co.'s No. 1 Glauque, 484 ft. N, 390 ft. E, SW cor. NW SW, Sec. 26-7-14 ..... Drlg. broken lime and shale 3,958 ft.

Oil Carries the Load

Do You Understand FAST'S New and Better Coupling Principle?



Fast's simple coupling development consists of a spur gear on each shaft end, a sleeve with internal gears to mesh. Oil in the sleeve carries the load between.



Fast's Coupling on Jackson hot oil pump, Continental Oil Co., Sapulpa, Okla.

SEE the development of Fast's shaft coupling design. A simple mechanical principle is used to eliminate all flexible pins, bushings, springs, discs or grids.

Two spur gears, one on each shaft end, are in mesh with the internal gears of a floating sleeve. The entire assembly rotates as one unit, misalignment being compensated for between the lubricated faces of the gear teeth.

What is the lubrication principle? The casing is partly filled with oil. As the coupling revolves the oil is distributed between the gear teeth by centrifugal and capillary action.

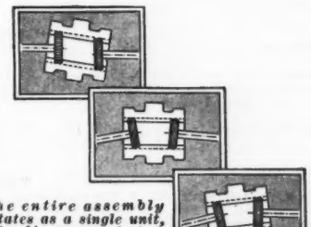
In operation, the teeth rock slightly back and forth at each revolution. This rocking action is so cushioned by the oil film that there is actually no metal-to-metal contact and therefore no wear. This has been definitely demonstrated mathematically, experimentally and in actual operation on thousands of couplings on practically every type of drive.

Mail the coupon and we will send you the new free bound catalog showing how and why Fast's couplings are eliminating coupling problems and prolonging the life of machinery in your industry. The catalog is free and should be in your permanent files.

FAST'S COUPLING

Self-Aligning

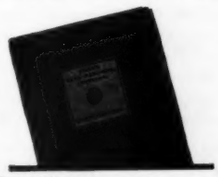
NO FLEXIBLE MATERIALS



The entire assembly rotates as a single unit, misalignment being taken up between the lubricated faces of the gear teeth.

THE BARTLETT HAYWARD CO.

218 Scott Street, Baltimore, Md.



Send me the free bound copy of the new Fast's 10th Anniversary Catalog showing varieties of designs and installations, containing valuable data on coupling installation.

NAME.....

FIRM NAME.....

ADDRESS.....

CITY AND STATE.....

McDaniel & Lieber's No. 2 Batson, 480 ft. S, 220 ft. E, NW cor. SW SE, Sec. 16-8-13 ..... Cmtd. 6⅝-in. 2,190 ft; bailing to test 2,440 ft.

Merritt et al's No. 1 La. Long Leaf Lbr. Co., 8¼ NE NE, Sec. 35-8-11 ..... Cored shale 2,214 ft.

Paramount O. & G. Co.'s No. 1 Woolems, 330 ft. N, 330 ft. W, SE cor. NE NW, Sec. 11-6-12 ..... Small show oil 2,580 ft.

Pelican Nat. Gas Co.'s No. 6 Sabine Lbr. Co., 330 ft. S, 330 ft. E, NW cor. NE NE, Sec. 11-7-12 ..... Location.

D. H. Riddick's No. 1 Scretchfield, 400 ft. E, 400 ft. N, SW cor. NW SE, Sec. 18-9-12 ..... Made 30-ft. hole 3,280-3,310 ft; S.D.

Sabine Synd.'s No. 1 G. Pence, 330 ft. N, 330 ft. E, SW cor. SE NW ..... Cmtd. 6-in. 2,290 ft.

Toteco Oil Co.'s No. 1 La. Long Leaf Lbr. Co., 325 ft. S, 100 ft. W, NE cor. NW, Sec. 18-6-12 ..... Arranging to deepen; 4,077 ft.

Triangle Pet. Co.'s No. 1 Sabine Lbr. Co. (was R. B. Whittle's), 330 ft. N, 330 ft. E, SW cor. SE SW, Sec. 36-8-12 ..... Derrick.

Wilson & Son's No. 1 Gandy-Garrett, NW SW, Sec. 4-5-12 (portable rig) ..... Drlg. 1,530 ft.

TENSAS PARISH

Seip et al's No. 1 Fowler, C SW NE, Sec. 10-10-10 ..... Drlg. gummy green shale 815 ft.

A. R. Willis et al's No. 1 Currey, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 39-11-12 ..... Reamed to bottom; S.D. 2,780 ft.

WEBSTER PARISH

Coyle, trustee's No. 1 Frazer, 200 ft. N, 200 ft. E, SW cor. NE SE, Sec. 27-23-11 ..... Derrick.

ARKANSAS

CHICOT COUNTY

H. R. Smith's No. 1 Lytle, 660 ft. N, 660 ft. E, C, Sec. 31-18-3 ..... Drlg. 2,924 ft.

CLAY COUNTY
(Cable tools)

S. C. Jeffries, trustee's No. 1 Underwood, 510 ft. N, 350 ft. W, C NW SE, Sec. 4-20-8 ..... Tested estimated 1,000,000 ft. gas 280 ft; cmtd. 10-in. 305 ft; S.D. 330 ft.

CLEBURNE COUNTY

Donnelly-Craver et al's No. 1 Donophan Lbr. Co., SE cor. NW, Sec. 33-11-9 ..... Milling out junk 3,640 ft.

COLUMBIA COUNTY

J. W. Olvey et al's No. 1 Kate George, 200 ft. N, 245 ft. E, SW cor. NW SW, Sec. 29-18-20 ..... Drlg. sandy shale 2,660 ft.

FRANKLIN COUNTY

Red Bank Oil Co.'s No. 1 Hamm, 660 ft. N, 660 ft. E, C, Sec. 33-10-6 ..... O.W.D.D; completed Oct. 8; estimated 6,500,000 ft. gas; 775 lbs. rock, 3,750 ft; milling out junk 3,750 ft.

GARLAND COUNTY
(Cable tools)

Givens et al's No. 1 Garrett, 660 ft. S, 660 ft. W, C, Sec. 1-3-19 ..... Drlg. lime 3,779 ft.

HOT SPRINGS COUNTY

Anisman et al's No. 1 Hinson est., NE NE, Sec. 19-4-16 (portable rig) ..... Drlg. 1,375 ft.

John Watkins' No. 1 Cunningham (was J. R. Lockhart's), 285 ft. S, 285 ft. W, NE cor., Sec. 11-5-16 ..... Cmtd. 12½-in. 42 ft; S.D. 110 ft.

LAFAYETTE COUNTY

McIver et al's No. 1 Hottle, NW cor. NE, Sec. 1-20-6 ..... Began drlg. Nov. 8; S.D. 21 ft.

LINCOLN COUNTY

B. F. Thompson, trustee's No. 1 McGhee, 330 ft. S, 150 ft. W, C, Sec. 8-8-7 ..... Rigging up.

LITTLE RIVER COUNTY

A. L. Buck's No. 1 Greason, NW NW, Sec. 25-12-32 ..... S.D. 2,502 ft.

LOGAN COUNTY

Ark.-La. P. L. Co.'s No. 1 Jno. Jansen, 350 ft. S, 455 ft. E, NW cor. NE NE, Sec. 35-8-24 ..... Began drlg. Nov. 10.

J. H. Flowers' No. 1 J. H. White, Sec. 13-6-26 ..... U.R. 5 3/16-in. 3,570 ft; T.D. 3,610 ft.

MADISON COUNTY
(Cable tools)

J. W. Baxter's No. 2 Hallem, C, Sec. 17-16-26 ..... Drlg. 295 ft.

MILLER COUNTY

Bullock Oil Co.'s No. 1 Hervey, SE NE, Sec. 33-14-26 ..... Drlg. 1,600 ft.

East Texas O. & G. Co.'s No. 1 Harvey, 500 ft. E, 300 ft. S, NW cor., Sec. 2-15-26 ..... 2-ft. sand 888 ft. dry; S.D; W.O. 900 ft.

E. & F. Oil Co.'s No. 1 E. L. Beck, 200 ft. S, 200 ft. E, NW cor. SW, Sec. 36-15-26 ..... D.S. test 2,804 ft; 500 bbls. S. W; 10 bbls. oil; flowed 125 bbls. fluid 10% oil, 2,814 ft; set short string 4½-in. 2,958 ft; 2-ft. sand showing oil; T.D. 2,960 ft.

Fitzwater et al's No. 1 Beck, 200 ft. N, 200 ft. W, SE cor. SW SE, Sec. 33-15-26 ..... Began drlg. Oct. 13; cmtd. 10-in. 93 ft.

Lenz et al's No. 2 Johnson, SE cor., Sec. 24-15-16 ..... Coring 3,100 ft.

Lenz et al's No. 3 Johnson, 250 ft. W, 150 ft. N, SE cor. NE NW, Sec. 24-15-26 ..... Drlg. 1,000 ft.

Salzer & McRae's No. 1 Rose, SW cor. NE NW, Sec. 9-16-26 ..... Drlg. 450 ft.

OUACHITA COUNTY

Belmont et al's No. 1 Buck, SE cor. SE SW, Sec. 16-15-17 ..... Fishing drill bit and collar; T.D. 2,907 ft.

Copenhaven et al's No. 1 Elliott, Sec. 11-15-17 ..... Drlg. 1,400 ft.

Graves Bros.' No. 1 Walker, 350 ft. N, 280 ft. E, SW cor., Sec. 9-14-18 ..... Pumping 50 bbls. fluid, 90% wtr. 1,873 ft.

A. B. Turner, trustee's No. 1 Dave Brown, 220 ft. N, 220 ft. E, SW cor., Sec. 23-15-18 ..... Junked and abd; skidded 55 ft. E; drlg. second hole 55 ft; cmtd. 10-in. 123 ft; drlg. 1,100 ft.

PIKE COUNTY

E. R. Henderson's No. 1 Tilyou, 660 ft. W, 500 ft. S, NE cor. NE SE, Sec. 26-8-14 ..... Drlg. pyrites 1,800 ft.

E. R. Henderson's No. 1 J. L. Lee, 400 ft. S, 350 ft. E, NW cor. SW SE, Sec. 31-8-24 ..... Derrick.

POPE COUNTY

Ark.-La. P. L. Co.'s No. 2 McFaddin, 685 ft. N, 485 ft. W, SE cor. NE SW, Sec. 15-9-21 ..... Drlg. sand 2,160 ft.

SCOTT COUNTY

Ark. Valley Gas Co.'s No. 1 Turner, C SE, Sec. 27-5-30 ..... Location.

Heavener O. & G. Co.'s No. 1 Riser, Sec. 36-4-26 ..... Hole clean; fishing 1,540 ft.

SEBASTIAN COUNTY

Lavaca O. & G. Co.'s No. 1 Davis, C NW NE, Sec. 29-8-30 ..... Drlg. 1,950 ft.

UNION COUNTY

S. B. Hickman's No. 1 Hogg, 330 ft. S, 150 ft. E, NW cor. SE SE, Sec. 35-16-17 ..... Drlg. 2,530 ft.

H. L. Hunt's No. 5 Swilly, 330 ft. S, 330 ft. W, NE cor., Sec. 28-16-16 ..... W.O.S.R; 2,000 ft. fluid; T.D. 2,689 ft.

H. L. Hunt's No. 6 Swilly, 330 ft. N, 330 ft. W, SE cor., Sec. 21-16-16 ..... Rig up.

Marine Oil Co.'s No. 5-A Thompson, 330 ft. S, 330 ft. W, NE cor. SW NE, Sec. 10-18-13 ..... Drlg. 2,040 ft.

Marine Oil Co.'s No. 1-F Winn, Sec. 10-18-13 ..... Hole full fluid 50% S.W; waiting on air; T.D. 3,604 ft.

Oil Field Corp.'s No. 1 Simmons, 330 ft. S, 330 ft. E, NW cor., Sec. 13-18-13 ..... Drlg. red beds 3,284 ft.

VAN BUREN COUNTY

Glenn Kohle et al, trustee's No. 1 Scalan, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 5-19-13 ..... S.D. 50 ft.

WASHINGTON COUNTY
(Cable tools)

Delbert & Graves' No. 1 Cunningham, Sec. 14-15-32 ..... S.D; W.O. 602 ft.

C. H. Willoughby's No. 1 Jones, Sec. 34-16-30 ..... Reaming 1,692 ft; T.D. 1,697 ft.

Lincoln Leaseholding Synd.'s No. 1 Lincoln, Sec. 30-15-32 ..... U.R. 8-in. to T.D. 1,500 ft.

H. H. Taylor et al's No. 1 Runny, C NE SW, Sec. 1-13-29 ..... 1,200 ft.

YELL COUNTY
(Cable tools)

Tegmeier & Luckett's No. 1 Falcon, Sec. 36-7-21 ..... S.D. 5,710 ft.

EAST TEXAS

BOWIE COUNTY

Joe Burnham et al's No. 1 G. W. Burnett, 150 ft. W, 400 ft. S, NE cor. G. W. Burnett 76 ac., in W. H. Janes Sur. ..... Base Austin chalk 3,095 ft; top red beds 3,145 ft; S.D. 3,150 ft.

Maud-Redwater Oil Co.'s No. 1 Merritt, 175 ft. N, 175 ft. E, SE cor. G. W. Hardige 100-ac. tract on Floyd Merritt tract in Y. S. McKinney Sur. ..... Began drlg. Nov. 7; cmtd. 10-in. 84 ft.

CAMP COUNTY

McDonald Bros.' No. 1 Tillery, 150 ft. E, 450 ft. S, NW cor. 127-ac. tr., in J. H. Murphy Sur. ..... Cored sand 3,510-16 ft; drlg. 3,600 ft.

CASS COUNTY

Wesley Morse et al's No. 1 Henderson, 300 ft. E, 1,100 ft. S, NW cor. C. E. Bailey Sur. ..... Derrick.

Phillips Pet. Co.'s No. 1 J. R. Olds, 300 ft. N, 170 ft. E, SW cor., J. A. Stephenson Sur. ..... Drlg. 1,500 ft.

John C. Rogers' No. 1 I. E. Lanier, 573 ft. N, 879 ft. W, SE cor. Lanier 86 ac. in K. E. Welborn Sur. ..... Did not test 2,180 ft; cored sandy shale 2,190 ft.

The Texas Co.'s No. 1 Citizens State Bank, 2,793 ft. W, 300 ft. S, NE cor., Jas. Watkins Sur. ..... Drlg. hard chalk 2,853 ft.

MARION COUNTY

P. E. Hussey's No. 1 A. A. Trammell, Chas. Lockhart Sur. ..... Claim 5-ft. core showing oil 1,884 ft; S.D. waiting for 8-in. csg.

RED RIVER COUNTY

D. M. Buffington's No. 1 Hossler, E. Hughhart Sur. ..... S.D. 2,865 ft.

Johnson Pet. Co.'s No. 2 Randolph, Edw. Dean Sur. ..... Swedging 2 jts. collapsed 8-in; arranging to cmt. 6⅝-in. and packer 2,182 ft.

SABINE COUNTY

Benedum & Trees Oil Co.'s No. 1 Nona Mills Lbr. Co., Jas. Mason Sur. ..... Drlg. 9-in. plug 4,200 ft.

SHELBY COUNTY

Chapparell Oil Co.'s No. 2 Holt, Matthew Moore Sur. ..... T.A. hard lime 3,350 ft.

G. R. Ridgeway's No. 1 G. D. Parker, 4,980 ft. E, 750 ft. N, SW cor., Jessie McKelvey Sur. ..... Drlg. shale 2,644 ft.

MISSISSIPPI

ALCORN COUNTY

Alcorn Pet. Co.'s No. 1 Matthews, SE cor., Sec. 14-2s-7e ..... Fishing 6-in. and tools 2,392 ft; T.D. 2,735 ft.

ATTALA COUNTY

Ark.-La. P. L. Co.'s No. 1 H. A. Moore, 500 ft. W, 330 ft. S, N cor. SE NW, Sec. 2-15-5e ..... Drlg. 1,545 ft.

CLAY COUNTY

Ohio Oil Co.'s No. 1 Cantrell, NE cor., Sec. 16-15-5 ..... Drlg. 2,120 ft.

CHICKASAW COUNTY

Hightower & Golson's No. 1 Flemming, NE cor., Sec. 20-13-3 ..... Driving 8¼-in. 1,534 ft; T.D. 1,700 ft.

GRENADA COUNTY

F. E. West et al's No. 1 Dubard, NW NW, Sec. 18-22-4 ..... Derrick.

HINDS COUNTY

Attkison & Dyers' No. 1 Wiggins, Sec. 33-6-1e ..... Derrick.

Big Block Oil Co.'s No. 1 Southern Christian Institute, C N½ NE, Sec. 30-6-4 ..... S.D. 1,910 ft; will drop from report.

Cane River O. & G. Co.'s No. 1 Kabbles, NE cor. SW SW, Sec. 15-5-1e ..... Top chalk 2,541 ft. and cmtd. 7-in.; T.D. 2,548 ft.

Gulf Ref. Co.'s No. 1 McLaurin, 1,230 ft. S, 1,410 ft. W, NE cor., Sec. 30-6-2e ..... Drlg. broken sand 2,072 ft.

Hawkeye Gas Co.'s No. 1 Webster, NW cor. NE NW, Sec. 15-5-1e ..... Set 4½-in. 2,470 ft. inside 6⅝-in. set at 2,474 ft; T.D. 2,476 ft.

Howard Oil Co.'s No. 1 Jackson College, C NW NW, Sec. 9-5-1e ..... Rig up.

Jackson Oil Co.'s No. 1 Central Cotton Oil Co., NW cor., SW NW, Sec. 3-5-1e ..... Rig up.

Dr. Barney Kennedy's No. 1 Fee, 150 ft. E, 200 ft. N, SW cor. NE NE, Sec. 34-6-1e ..... Location.

Love Pet. Co.'s No. 1 Maley, SE cor. NW, Sec. 15-5-1e ..... Top Midway 2,387 ft; top chalk 2,487 ft. and cmtd. 6⅝-in; claim oil show estimated 10 bbls. 13° gravity clean oil, no gas 2,487-2,490 ft; flowed 25 bbls. oil and 300 bbls. wtr. 105° F; T.D. 2,494 ft; W.O.S.R.

Love Pet. Co.'s No. 1 Morton Lbr., Co., 1,500 ft. E. 1,525 ft. N, SW cor., Sec. 34-6-1e ..... Began drlg. Nov. 1; cmtd. 15½-in. 47 ft; S.D.

Miss. Pet. Co.'s No. 1 Baptist Orphanage, 175 ft. E, 130 ft. N, SW cor. SE SE, Sec. 28-6-1e ..... Waiting for csg; T.D. 2,475 ft.

Miss. Pet. Co.'s No. 1 Solvent Inv. Co., NE cor. NE SW SW, Sec. 14-5-1w ..... S.D. 2,710 ft.

Miss.-Tex. Oil Co.'s No. 1 Negro Fair Assn., SW cor. NW SE, Sec. 28-6-1e ..... S.D; 6⅝-in. parted 500 ft. off bottom; S.D; W.O. 2,479 ft.

Mrs. Reeder et al's No. 1 State, SE cor. NW NW, Sec. 25-6-1e ..... W.O; T.D. 2,905 ft; will drop from report.

Tri-State O. & G. Co.'s No. 1 Wilson, SW cor. SE NE, Sec. 23-6-1e ..... Derrick.

Universal Gas Co.'s No. 1 Sharbrough, SW cor. SE, Sec. 28-6-1e ..... Began drlg. July 39; S.D; W.O. 88 ft.

HUMPHRIES COUNTY

E. S. Steele et al's No. 1 C. B. Box, SE cor. SE NE, Sec. 25-14-4w ..... Set 12½-in. 60 ft; S.D.

JASPER COUNTY

Bay Springs Pet. Co.'s No. 1 Keys, C NW NE, Sec. 21-2-10 ..... Derrick.

LAUDERDALE COUNTY

J. R. Smith Oil Co.'s No. 1 C. F. Craig, Sec. 2-16-14 ..... Derrick.

LAFAYETTE COUNTY

Banks-Good et al's No. 1 May, 113⅓ rds. S, 26 rds. E, NW cor. SW, Sec. 22-10-1w ..... Derrick.

MADISON COUNTY

Barney Kennedy et al's No. 1 Raymond, 300 ft. E, 1,800 ft. N, SW cor., Sec. 32-7-2e ..... Cmtd. 12½-in. 706 ft.

MONROE COUNTY

Amory Dev. Co.'s No. 1 Bourland, Sec. 2-13-19 ..... Resumed operations Oct. 2; recovered lost bailer; S.D; W.O. 3,007 ft.

Amory Pet. Co.'s No. 2 Carter, C SE SE, Sec. 7-13-17 ..... Drlg. lime 775 ft.

Amory Pet. Co.'s No. 1 Harris, SW cor. SE SE, Sec. 18-13-17 ..... Derrick.

Associated Oil Co.'s No. 1 School, SW cor. SW SE, Sec. 16-15-17 ..... Began drlg. Aug. 26; S.D. 32 ft.

Park Bowser et al's No. 1 Cowart, second hole, Sec. 2-12-19 ..... Drlg. 300 ft.

RANKIN COUNTY

R. A. Moore et al's No. 1 Interior Lbr. Co., Sec. 28-6-1e ..... S.D. 900 ft.

Cleve Love's No. 1 Muse, SE cor. SW SW, Sec. 32-7-4e ..... Derrick.

Love Pet. Co.'s No. 1 Moore (was Interior Oil Co.'s), 660 ft. N, 660 ft. W, SE cor. NW NW, Sec. 28-6-2e ..... S.D. 900 ft.

Sabine O. & G. Co.'s No. 1 Taylor, SE cor. SW NE, Sec. 6-5-2e ..... Began drlg. Nov. 10.

Jackson Royalties, Inc.'s No. 1 Pate, NE cor. NE SE, Sec. 12-5-1e ..... Began drlg. Oct. 5; cmtd. 12½-in. 280 ft; drlg. shale 2,120 ft.
Cleve Love et al's No. 1 Brown, C NW SE, Sec. 12-5-1e ..... Began drlg. Oct. 9; drlg. 1,200 ft.
Pearl River O. & G. Co.'s No. 2 Pate, SE cor. SW SE, Sec. 12-5-1e ..... Began drlg. Oct. 7; cmtd. 10-in. 292 ft.

WARREN COUNTY

Raymond A. Moore et al's No. 1 Clark, SE, Sec. 31-16-5 (no check) ..... Derrick.
Vicksburg Oil Co.'s No. 1 Dornbush, 2,080 ft. S, 1,520 ft. W, NE cor., Sec. 8-18-5 ..... Waiting on drill stem; T.D. 1-350 ft.

WINSTON COUNTY

Miss. Drlg. Co.'s No. 1 Scarbrough, NW cor., Sec. 15-12-14 ..... Drlg. chalk 1,248 ft.

GULF COAST FIELDS AND WILDCATS

(Continued from Page 50)

Humble & Valley's No. 3 Sherrod ..... Derrick.
Humble & Valley's No. 11 Thompson ..... Sandy shale showing oil 3,250 ft; cem. casing.
Humble & Valley's No. 6 Woodley ..... Derrick.
Humble & Valley's No. 7 Woodley ..... Derrick.
Humble & Valley's No. 8 Woodley ..... Derrick.
Humble & Valley's No. 9 Woodley ..... Derrick.
Humble & Valley's No. 10 Woodley ..... Drlg. sandy shale 3,281 ft.

HUMBLE—HARRIS COUNTY

Cullen West's No. 5 Lee, south ..... Drlg. shale 3,640 ft.
John Deering's No. 2 Bennett ..... Drlg. shale 4,010 ft.
P. S. Griffith's No. 1 fee ..... Drlg. gumbo 1,880 ft.
LaRue, trustee's No. 1 Crane, northwest ..... Derrick.
M. LaRue's No. 1 Tuffly, northwest ..... Drlg. gumbo 1,405 ft.
Southern Coastal Oil Co.'s No. 2 Perkins ..... Drlg. sandy shale 1,512 ft.
South Texas Pet. Co.'s No. 3 Burt, east ..... Drlg. shale 3,872 ft.
Sun Oil Co.'s No. 13 Bender (workover) ..... Pulling liner to deepen 4,589 ft.
Sun Oil Co.'s No. 14 Bender, west ..... Drlg. shale 5,349 ft.
Sun Oil Co.'s No. 16 Bender ..... Derrick.
Sun Oil Co.'s No. 18 Bender ..... Drlg. shale 3,517 ft.
Sun Oil Co.'s No. 49 River, north ..... Drlg. shale 5,546 ft.
The Texas Company's No. 2 fee ..... Total depth 4,397 ft.; sidetracking brown sticky shale and boulders 3,727 ft.
The Texas Company's No. 43 Stevenson, east ..... Set 460 ft. screen 4,823 ft.; comp. flowing 1,900 bbls. on ½-in. choke.
Trapshooter Oil Co.'s No. 2 Rosenbaum ..... Shale 4,067 ft.; cem. 6⅝-in. casing 4,025 ft.

PIERCE JUNCTION—HARRIS COUNTY

Gulf Prod. Co.'s No. 2 Manchester Corp. ..... Rig.
Mike Kouri's No. 1 Jones fee, northwest ..... Total depth 3,840 ft.; sidetracked to oil sand 3,650 ft.; set screen 3,634 ft.
Rio Bravo Oil Co.'s No. 20-A Settegast ..... Total depth 5,550 ft.; sidetracked and drlg. sand and shale 5,200 ft.

BIG CREEK—FORT BEND COUNTY

Gulf Production Co.'s No. 61 Davis ..... Rig standing.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 5 Lost Lake ..... Drlg. anhydrite 5,319 ft.; top anhydrite 5,301 ft.
Pure Oil Co.'s No. 12 Lost Lake ..... Drlg. tough gumbo and lime 1,990 ft.

NASH—BRAZORIA COUNTY

Rycade Oil Corp.'s No. 27 Wisdom ..... Total depth 5,662 ft.; drlg. plug 4,135 ft.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 100-A Cotton ..... To pump 539 ft.
Rio Bravo Oil Co.'s No. 102-A Cotton ..... Drlg. gumbo 242 ft.

GOOSE CREEK—HARDIN COUNTY

Humble Oil & Ref. Co.'s No. 78 Simms-Smith ..... Trying to set 9⅝-in. casing 4,993 ft.

SPINDLETOP—JEFFERSON COUNTY

Yount Lee Oil Co.'s No. 72 McFaddin ..... Drlg. shale and lime 4,881 ft.
Yount Lee Oil Co.'s No. 143 McFaddin ..... Drlg. shale and lime 5,427 ft.
Yount Lee Oil Co.'s No. 144 McFaddin ..... Drlg. hard sand and lime 5,073 ft.

NORTH DAYTON—LIBERTY COUNTY

Saxet Oil Co.'s No. 2 Davis ..... Drlg. sand and shale showing oil 5,105-75 ft.
Harrison & Abercrombie's No. 1 Jones ..... Total depth 4,625 ft.; sidetracking 1,869 ft.
Harrison Oil Co.'s No. 4 Quintette (workover) ..... Drlg. sand and shale 4,953 ft.
Harvey Smith's No. 1 Kynerd ..... Drlg. gumbo 1,167 ft.

HIGH ISLAND—GALVESTON COUNTY

Gulf Prod. Co.'s No. 10 Smith ..... Sand and shale showing oil 5,792 ft.; drill stem stuck.
Marrs McLean's No. 19 Cade ..... Drlg. hard sand and shale 3,159 ft.
Marrs McLean's No. 20 Cade ..... Rig.

LIBERTY—LIBERTY COUNTY

Empire Gas & Fuel Co.'s No. 14 O'Brien ..... Drlg. hard lime 3,877 ft.
Trinity Petroleum Co.'s No. 1 C. W. Pickett ..... Oil sand 3,420 ft.; cem. casing.

ORANGE—ORANGE COUNTY

Gulf Prod. Co.'s No. 12 Hagen-Moore ..... Swabbing 3,504 ft.
Orange Pet. Co.'s No. 13 Chesson ..... Casing collapsed 2,150 ft.

ORCHARD—FORT BEND COUNTY

Gulf Production Co.'s No. 27 Moore ..... Rig.

HULL—LIBERTY COUNTY

Republic Prod. Co.'s No. 22 Dolbear (old well) ..... Abandoned in salt 3,256 ft.
W. B. Flynn's No. 7-B Able ..... Abandoned in salt 1,005 ft.

PORT NECHES—ORANGE COUNTY

Gulf Prod. Co.'s No. 1 W. H. Starks ..... Abandoned 6,973 ft.
The Texas Company's No. 2 Starks ..... Drill stem stuck 4,397 ft.; cem. back to 4,144 ft.

CLAY CREEK—WASHINGTON COUNTY

Sun Oil Co.'s No. 4 Janner ..... Drlg. shale 3,031 ft.
Sun Oil Co.'s No. 1 Freeman ..... Drlg. shale 1,779 ft.
Sun Oil Co.'s No. 3 Grote ..... Location.

SOUR LAKE—HARDIN COUNTY

The Texas Company's No. 307 fee ..... Bailed salt water 2,797 ft.; to deepen.

ESPERSON—LIBERTY COUNTY

Cranfill-Reynolds Oil Co.'s No. 17 Esperson ..... Total depth 3,951 ft.; set 3 joints 4½-in. casing; comp. flowing 200 bbls., 6% water.
Cranfill-Reynolds Oil Co.'s No. 1 Vajdak (workover) ..... Total depth 7,592 ft.; sidetracking.
Cranfill-Reynolds Oil Co.'s No. 6 Moore's Bluff ..... Drlg. 1,450 ft.
Cranfill-Reynolds Oil Co.'s No. 7 Moore's Bluff ..... Drlg. 200 ft.
Yount Lee Oil Co.'s No. 3 Moore's Bluff ..... Drlg. hard sand and shale 7,817 ft.

HANKAMER—LIBERTY COUNTY

Gulf Prod. Co.'s No. 1 Exzel ..... Drlg. sticky shale 5,473 ft.
Gulf Prod. Co.'s No. 10 Bert ..... Rig.

WEST COLUMBIA—BRAZORIA COUNTY

The Texas Company's No. 80 Hogg (workover) ..... Set screen 2,773 ft.; comp. flowing 1,000 bbls. net oil 16 hrs., 18% water.

BATSON—HARDIN COUNTY

Paraffine Oil Co.'s No. 86 Paraffine ..... Comp. pumping 15 bbls. oil 469 ft.
Ada Belle Oil Co.'s No. 144 McLean-Hooks ..... Abandoned 1,367 ft.

BOLING—WHARTON COUNTY

C. S. Thomas' No. 1 Volney ..... Standing shale 535 ft.

REFUGIO—REFUGIO COUNTY

Brookins et al's No. 1 Kay ..... Shut down 4,320 ft.
Houston Oil Co.'s No. 1 Rooke ..... Drlg. shale 5,320 ft.
Houston Oil Co.'s No. 2-A Fannie Heard ..... Pumping mud to kill gas 4,200 ft.
Houston Oil Co.'s No. 1 Doughty ..... To sidetrack 4,932 ft.
Houston Oil Co.'s No. 1 Tom Heard ..... Pulling liner 5,470 ft.
Houston Oil Co.'s No. 1 O'Connor ..... Plugged to 2,524 ft.
Houston Oil Co.'s No. 1 Rose Lambert ..... Set 15 ft. screen; comp. 175 bbls. 5,901 ft.
Phillips Petroleum Co.'s No. 1 Rose Lambert ..... Set 8-ft. screen 6,461 ft.
Phillips Petroleum Co.'s No. 1 O'Brien ..... Total depth 6,643 ft.; rig up to work over.
Edwin Jones' No. 2-A Mitchell ..... Oil sand 5,433 ft.; shale 5,441 ft.
Luling Oil & Gas Co.'s No. 1 Talman, Blk. 104 ..... Oil sand 6,446-58 ft.; set 6⅝-in. casing.
Luling Oil & Gas Co.'s No. 1 J. W. Kay ..... Standing 4,928 ft.
Luling Oil & Gas Co.'s No. 1 City, Lot 16, Blk. 4 ..... Rig.
Mission Drilling Co.'s No. 1 O'Brien (workover) ..... Standing 5,471 ft.
Moody-Seagraves Prod. Co.'s No. 1 Linney, Blk. 41 ..... Drlg. sticky shale 5,240 ft.
Moody-Seagraves Prod. Co.'s No. 1 Rooke ..... Drlg. sand, shale and lime 6,419 ft.
Moody-Seagraves Prod. Co.'s No. 1-A St. John ..... Drlg. water sand 6,300 ft.
Moody-Seagraves Prod. Co.'s No. 1 Strauch, Blk. 65 ..... Set liner and screen 6,451 ft.; comp. flowing 650 bbls. daily.
Moody-Seagraves Prod. Co.'s No. 1 O'Connor (workover) ..... Oil sand 6,441-53 ft.; cem. 5 3/16-in. casing 6,441 ft.
Moody-Seagraves Prod. Co.'s No. 5 Morgan-O'Connor ..... Set screen 5,756 ft.; comp. flowing 104 bbls. daily.
Moody-Seagraves Prod. Co.'s No. 6 Morgan-O'Connor ..... Location.
Moody-Seagraves Prod. Co.'s No. 1 Tom Heard, Blk. 3 ..... Set 15 ft. screen 6,469 ft.; comp. flowing 525 bbls.
Moody-Seagraves and Phillips Pet. Co.'s No. 1-C J. F. B. Heard (Independent) ..... Total depth 5,720 ft.; rigged up to work over.
Nichols Oil Co.'s No. 1 Wood ..... Drlg. shale 2,130 ft.
Ed Price's No. 2 Mission River ..... Standing 3,665 ft.
Pearson Properties, Inc.'s No. 1 Hornburg ..... Derrick.
Royal Oil Co.'s No. 1 Hornburg (workover) ..... Oil sand 5,420-47 ft.; cem. 4½-in. casing 5,420 ft.
Saxet Oil Co.'s No. 1 L. H. Johnson, Blk. 11 ..... Location.
Saxet Oil Co.'s No. 1 Fox heirs (workover) ..... Total depth 3,963 ft.; setting up larger rig.
Saxet Oil Co.'s No. 12 Clint Heard (workover) ..... Drlg. salt water sand 6,464 ft.
Saxet Oil Co.'s No. 1 Wilson Heard (workover) ..... Drlg. shale 2,517 ft.
Saxet Oil Co.'s No. 1 Ryals (workover) ..... Drlg. sticky shale 5,602 ft.
Sun Oil Co.'s No. 3 Rea ..... Drlg. shale 2,584 ft.
L. L. Smith's No. 1 Powers, Blk. 85 ..... Oil sand 6,445-59 ft.; cem. 4½-in. casing 6,450 ft.
L. L. Smith's No. 1 Rodgers ..... Drlg. shale and gumbo 562 ft.
Union Producing Co.'s No. 11 Fannie Heard ..... Drlg. sand 3,618 ft.
Union Prod. Co.'s No. 3 Fox ..... Oil sand 3,675 ft.; cem. 9-in. casing 3,650 ft.
Union Prod. Co.'s No. 5 Powers ..... Drlg. shale and lime 3,910 ft.

SOUTH LOUISIANA FIELDS
LOCKPORT—CALCASIEU PARISH

Union Sulphur Co.'s No. 1 Martha Moss ..... Drlg. gumbo and lime 6,790 ft.
Vacuum Oil Co.'s No. 8 Farquahar ..... Derrick.
Vacuum Oil Co. and Gulf Ref. Co.'s No. 28 Miller ..... Drlg. sand 5,620 ft.
Vacuum Oil Co.'s No. 30 Miller ..... Drlg. rock 1,930 ft.
Vacuum Oil Co.'s No. 31 Miller ..... Location.
Vacuum Oil Co.'s No. 6 Bayou State ..... Running tubing 4,415 ft.
Yount Lee Oil Co.'s No. 1 Miller ..... Total depth 7,854 ft.; plugged to sand 6,679-6,706 ft.; set 1 joint 5-in. screen; comp. flowing 792 bbls. pipe line oil, ⅝-in. choke, first 24 hrs.; pressure 650 lbs.; gravity 40 deg.

EDGERLY—CALCASIEU PARISH

Rex Petroleum Co.'s No. 13 Hunter ..... Drlg.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 2 Landry ..... Drlg. gumbo and lime 2,589 ft.
Calcasieu Oil Co.'s No. 1 State ..... Oil sand 3,963-75 ft.; cem. 6⅝-in. casing 3,967 ft.
Calcasieu Oil Co.'s No. 22 Watkins ..... Oil sand 2,621-59 ft.; cem. casing.
R. E. Seiss' No. 1 Vincent ..... Cap rock 1,975-2,043 ft.; to plug to shallow sand.
The Texas Company's No. 7 State ..... Drlg. shale 5,130 ft.
The Texas Company's No. 8 State ..... Location.
Yount Lee Oil Co.'s No. 33 State ..... Oil sand 2,629-53 ft.; cem. 7-in. casing.
Yount Lee Oil Co.'s No. 34 State ..... Location.
Yount Lee Oil Co.'s No. 35 State ..... Oil sand 2,634-57 ft.; cem. 7-in. casing.
The Texas Company's No. 36 State ..... Location.
The Texas Company's No. 37 State ..... Location.
The Texas Company's No. 38 State ..... Location.
The Texas Company's No. 39 State ..... Location.
The Texas Company's No. 40 State ..... Location.

JENNINGS—ACADIA PARISH

Yount Lee Oil Co.'s No. 9 Housierre Latrielle ..... Drlg. shale 8,464 ft.

VINTON—CALCASIEU PARISH

Edgerly Pet. Co.'s No. 2 McLean ..... Total depth 3,247 ft.; reset screen 2,856 ft.
Gulf Ref. Co.'s No. 69 G.&N.G. (workover) ..... Drlg. lime and gumbo 3,036 ft.
Gorbat Oil Co.'s No. 1 Clement Lyons ..... Total depth 4,040 ft.; sidetracking in sand 3,506 ft.
Vinton Petroleum Co.'s (Lucky Ten) No. 1 Lizzo ..... Total depth 3,326 ft.; preparing to work over.
Vinton Pet. Co.'s No. 2 Gray (workover) ..... Coring sand 3,642 ft.
Vinton Petroleum Co.'s No. 10 Gray ..... Set screen 3,600 ft.
Wilson-Broach's No. 2 Wilson (workover) ..... Drlg. sand 3,612 ft.

BAYOU BOUILLON—ST. MARTIN PARISH

Rycade Oil Corp.'s No. 1 Woodyard Lake ..... Fishing drill stem 6,085 ft.
Rycade Oil Corp.'s No. 4 State ..... Total depth 4,153 ft.; drlg. water sand 4,110 ft.

STARKS—CALCASIEU PARISH

I. O. Davis' No. 1 Industrial ..... Shut down 6,176 ft.

SORRENTO—ASCENSION PARISH

Gulf Ref. Co.'s No. 7 United Land Co. (workover) ..... Salt 1,920-2,275 ft.; abandoned.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 10 Yount Lee ..... Drlg. sand and gravel 822 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 745 Fee (workover) ..... Oil sand 4,063-79 ft.; comp. flowing 1,800 bbls. oil.
Union Sulphur Co.'s No. 763 Fee ..... Drlg. gumbo 3,642 ft.
Union Sulphur Co.'s No. 764 Fee ..... Drlg. salt 5,050 ft.; top salt 4,453 ft.

MISCELLANEOUS WILDCATS
TEXAS
AUSTIN COUNTY

Empire Gas & Fuel Co.'s No. 1 Kuntze, San Felipe ..... Drlg. shale and lime 4,890 ft.
O'Hara et al's No. 1 Schrader ..... Shut down for fuel 1,794 ft.

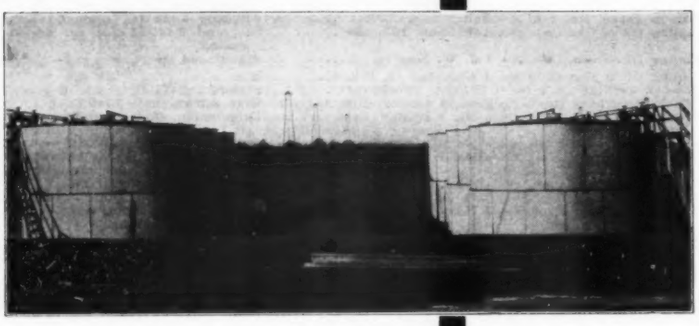
BRAZORIA COUNTY

The Texas Company's No. 1 Ewin, Harvey Little Sur. ..... Drlg. sand and shale 7,508 ft.; showing gas.
The Texas Company's No. 1 J. H. Murdock, Fresno ..... Drlg. sand and shale 5,898 ft.
Mills Bennett Prod. Co.'s No. 2 Reece, Allen ..... Drlg. rock 1,774 ft.
Mills Bennett Prod. Co.'s No. 2 Random, Allen ..... Location.
Mills Bennett Prod. Co.'s No. 2 Allen ..... Total depth 5,187 ft.
Mills Bennett Prod. Co.'s No. 1 Poole (workover) ..... Pulled liner 4,374 ft.
Faust et al's No. 5 Faust ..... Drlg. shale 5,589 ft.
Freeport Sulphur Co.'s No. 2,001 fee, Bryan Heights ..... Total depth 4,261 ft.; sidetracking shale 3,456 ft.
Freeport Sulphur Co.'s No. 2 Seaburn ..... Drlg. rock 1,000 ft.
Freeport Sulphur Co.'s No. 1 Tolar, Stratton Ridge ..... Anhydrite 1,400 ft.; set 8-in. casing 1,370 ft.
Layne et al's No. 7-A Wisdom, Damon Mound ..... Drlg. hard lime 1,917 ft.
Rycade Oil Corp.'s No. 2 Seaburn, Stratton Ridge ..... Water 4,148 ft.
Steel & Strickland's No. 1 Lockbridge ..... Spudded and shut down.
United Oil Syndicate's No. 1 Speer, A. A. Talmadge Sur. ..... Drlg. gumbo 110 ft.

CALHOUN COUNTY

The Texas Company's No. 1 Thomas, J. P. Tilley Sur. ..... Abandoned 5,956 ft.

Six 1,000-Bbl. Maloneys in the Oklahoma City Field. Erected by distributer, Maloney Sales Corporation.



Our Vapor-Pressure Construction Insures Maximum Net Profits

MALONEY *Vapor-Pressure* Tanks are equipped with valves set at 16-oz. pressure and 2-oz. vacuum—holding the oil and the vapors within sides, decks and bottoms of 12-gauge (or heavier) steel, reinforced and tied with heavy 2x2 angles, and coated with aluminum paint.

By eliminating breathing losses, these tanks insure maximum income from production. By being remarkably durable, they insure maximum service for your tank investment. And you pay no premium in price for the correct construction of MALONEY *Vapor-Pressure* Tanks.

"Alone in Quality"

MALONEY TANK MFG. CO.
Tulsa, Okla., U.S.A.

Distributers at All Principal Petroleum Points

Maloney A.P.I. Bolted Steel Tanks conform with A.P.I. dimensional standards and carry the official A.P.I. monogram.

MADE OF AMERICAN

MALONEY PATENTED BOLTED COPPER-STEEL TANKS

MALONEY
ALONE

CHAMBERS COUNTY

Chicago Oil Corp.'s No. 1 Lawrence	Drlg. shale and lime 4,156 ft.
Shell Pet. Corp.'s No. 2 Herff, Moss Bluff	Drlg. hard shale and lime 5,755 ft.

GRIMES COUNTY

Cullen & West's No. 1 Bookman, J. Greenwood Sur.	Drlg. gumbo 1,820 ft.
Deering et al's No. 1 Munker, Darius Gregg Sur.	Drlg. shale 3,366 ft.
Deering & Noble's No. 1 Templeton, 8 miles south of Navasota	Shut down 3,500 ft.

HARDIN COUNTY

D. O. Speight's No. 1 fee, near Batson	Shut down 2,857 ft.

HARRIS COUNTY

Cypress Oil & Development Co.'s No. 2 Kitzman	Location.
Gulf States Oil Co.'s No. 1 Angsperger	Drlg. shale and lime 2,866 ft.
Harrison & Abercrombie's No. 1 Gerring, Mykawa	Location.
Humble Oil & Ref. Co.'s No. 8 Warren, Hockley	Abandoned 5,881 ft.
Humble Oil & Ref. Co.'s No. 4 Minnetex, Mykawa	Drlg. hard sand 1,353 ft.
Golden State Oil Co.'s No. 1 McDade, N. Brady Sur.	Abandoned in sand and shale 6,016 ft.
Sloane Prospecting Co.'s No. 1 Wasova	Location.
W. C. Turnbow et al's No. 1 Miller, Arthur McCormick Sur.	Drlg. sand, shale and lime 3,358 ft.

JACKSON COUNTY

Jackson County Oil Syndicate's No. 8 Drushell, Edna	Gas sand 3,866-70 ft.; cem. 6⅝-in. casing 3,864 ft.
Wright Bros.' No. 2 Lee	Shut down 3,947 ft.
Warner-Quinlan's No. 1 Hungerford, Henry Smith Sur.	Location.

JEFFERSON COUNTY

Humble Oil & Ref. Co.'s No. 1 McFaddin, T.&N.O. Sur. 234	Driving piling for derrick.
Keith et al's No. 1 Reed-Hankamer	Location.
The Texas Company's No. 4 Pipkin, Big Hill	Drlg. sand and shale 3,097 ft.

LIBERTY COUNTY

Hamm et al's No. 1 Harvard, Davis Hill	Shut down 112 ft.
Humble Oil & Ref., Co.'s No. 1 Breeding, Moss Bluff	Drlg. sandy shale 6,051 ft.
Humble Oil & Ref. Co.'s No. 1 Orlando Hylton, Moss Bluff	Drlg. shale 6,443 ft.
Humble Oil & Ref. Co.'s No. 1 Sergent, Moss Bluff	Drlg. hard sand and shale 5,630 ft.
Tucker et al's No. 1 Bell, H.&T.C. Sur. No. 4	Derrick.

MATAGORDA COUNTY

H. C. Cockburn's No. 2 Hawkins, Shepherds Mott	Drlg. hard shale 4,771 ft.
Empire Gas & Fuel Co.'s No. 1 Boker, Citrus Grove	Drlg. rock 6,043 ft.

MONTGOMERY COUNTY

Lake Creek Oil Co.'s No. 1 Hunt, South of Conroe	Shut down 678 ft.; gumbo.
Price & Whitehead's No. 2 Guerges	Shut down 2,956 ft.

NACOGDOCHES COUNTY

E. L. Burke et al's No. 1 Latimer, Jose De Los Santos Sur.	No report.

REFUGIO COUNTY

Blanco Oil Co.'s No. 1 Dorman	Shut down 3,120 ft.

SAN JACINTO COUNTY

E. P. Edwards et al's No. 1 Bennett, northwest of Cold Springs	Rig.

VICTORIA COUNTY

Houston Oil Co.'s No. 1 McFaddin, C. O. Edwards Sur.	Shut down 4,611 ft.
The Texas Company's No. 1 McFaddin, H. Bonny Sur.	Drlg. sand 6,210 ft.
Lion Oil & Ref. Co.'s No. 2 McFaddin, M. Traviers Sur.	Fishing drill stem 6,454 ft.
Newton et al's No. 1 West	Shut down 1,550 ft.

WHARTON COUNTY

H. H. Given's No. 1 Hudgins, near Hungerford	Sand rock 850 ft.; temp. aban.

SOUTH LOUISIANA
CALCASIEU PARISH

Crawford Doyle's No. 1 Johnson, Sec. 23-9s-13w	Drlg. sand 371 ft.
J. O. Davis' No. 1 Industrial, Sec. 29-9s-10w	Reaming 6,185 ft.
Wilfred Lahay's No. 1 Jardell, Sec. 16-10s-12w	Derrick.
Dr. Thomas et al's No. 1 John Hewitt	Location.
Vacuum Oil Co.'s No. 1 Wait, Iowa	Moving in rig.

CAMERON PARISH

Shell Petroleum Corp.'s No. 2 State, Black Bayou	Location.
Shell Petroleum Corp.'s No. 16 Watkins, Black Bayou	Bldg. derrick foundation.
Vacuum Oil Co.'s No. 1 Cameron Meadows, Sec. 21-14s-13w	Total depth 5,248 ft.; sidetracked 5,195 ft.; drill stem stuck.
The Texas Company's No. 6 State, Calcasieu Lake	Total depth 1,978 ft.; drlg. plug 1,908 ft.
The Texas Company's No. 7 State, Calcasieu Lake	Location.

IBERIA PARISH

The Texas Company's No. 6 Vermillion Bay	Driving piling.

IBERVILLE PARISH

Gulf Ref. Co.'s No. 1 Gay, Bayou Choctou	Standing 61 ft.
Shell Pet. Co.'s No. 5 Wilbert, White Castle	Drlg. hard sandy lime 4,368 ft.
Standard Oil Co.'s No. 7 Wilbert, Bayou Blue	Derrick.
Standard Oil Co.'s No. 8 Wilbert, Bayou Des Glaise	Fishing stuck drill stem 3,640 ft.
Standard Oil Co.'s No. 1 E. B. and S. P. Schwing, Bayou Blue	Drlg. hard sand 4,441 ft.
Standard Oil Co.'s No. 1 Baist Cooperage, Bayou Blue	Bldg. derrick.

JEFFERSON PARISH

Humble Oil & Ref. Co.'s No. 1 Delaware, Sec. 2-16s-23e	Drlg. sandy shale 7,430 ft.

JEFFERSON DAVIS PARISH

H. T. McClain et al's No. 1 Trimble Atterbury, Welsh, Sec. 16-9s-5w	Rigging up.
Vacuum Oil Co.'s No. 1 Tietje, Roanoke	Spudded.

PLAQUEMINE PARISH

Gulf Ref. Co.'s No. 2 Buras Levee Board	Moving in.
Humble Oil & Ref. Co.'s No. 2 Cockrell-Moran, Lake Grand Ecaille	Shut down 1,057 ft.; waiting casing.
The Texas Company's No. 4 State, Garden Island	Total depth 4,414 ft.; sidetracking 3,036 ft.
The Texas Company's No. 5 State, Garden Island	Location.

ST. JAMES PARISH

Convent Oil Co.'s No. 2 Uncle Sam, Sec. 28-11s-4e	Set screen 1,834 ft.; shut down.

ST. MARTIN PARISH

The Texas Company's No. 3 Iberville Land	Location.
The Texas Company's No. 4 St. Martin, Hager	Derrick.
The Texas Company's No. 5 St. Martin, Hager	Derrick.

ST. TAMMANY PARISH

Washington-St. Tammany's No. 2 Caussack, Sec. 5-6s-10e	Drlg. shale 1,108 ft.

TERREBONNE PARISH

Louisiana Gas & Fuel Co.'s No. 9 Minor, Houma	Drlg. hard sand 1,593 ft.
The Texas Company's No. 1 L.L.&E., Bay St. Elaine	Derrick.
The Texas Company's No. 5 State, Bay St. Elaine	Cem. casing.
The Texas Company's No. 4 State, Caillou Island	Location.
The Texas Company's No. 5 State, Caillou Island	Drlg. salt 4,214 ft.
The Texas Company's No. 6 State, Bay St. Elaine	Location.
The Texas Company's No. 3 State, Dog Lake	Drlg. gumbo and lime 5,757 ft.
The Texas Company's No. 4 La. L. & E., Four Isle	Drlg. sandy shale 6,535 ft.
The Texas Company's No. 2 La. L. & E., Bay Junop	Drlg. shale and lime 5,990 ft.
The Texas Company's No. 6 State, Lake Pelto	Derrick.
The Texas Company's No. 6 State, Lake Barre	Location.
The Texas Company's No. 7 State, Lake Barre	Derrick.
The Texas Company's No. 8 State, Lake Barre	Derrick.
The Texas Company's No. 9 State, Lake Barre	Location.

WEST FELICIA PARISH

Putnam Syndicate's No. 1 Como Plantation, Sec. 51-1e-4w.	Total depth 3,738 ft.; fishing stuck drill stem.

DANIEL ROSFORD DIES

CHATHAM, Ontario, Nov. 15.—Daniel Rosford died recently at Memphis, Mich., aged 80. In his earlier years he was employed in the oil well supply trade at Petrolia, Ontario, and later engaged in foreign drilling, and was for a time employed by Imperial Oil, Ltd., at Sarnia.

OIL IN GREENLAND

A British-American expedition to East Greenland has returned to Norway and reports discovery of springs in which the water contained much petroleum. While details are lacking, the members of the expedition claim that the wells are rich in oil. Norwegians have hunting rights in the region where the wells were found.

OKLAHOMA FIELDS

(Continued from Page 42)

which is now shut down at a total depth of 2,456 feet. The casing was cemented at 2,241 feet, and it was bailed down without showing oil or gas.

Ten Gas Wells in Perry Area

The tenth gas well was completed in the area southwest of Perry in Noble County, during the week giving the new field an estimated open flow of 160,000,000 feet of gas. Continental Oil Co.'s No. 1 Lavington, C SE SE, Section 32-21-1w, made 13,000,000 feet of gas from sand at 3,398-3,410 feet.

Noble County is one of the active areas in the northern part of the State. Several semiwildcat tests are drilling which are expected to extend production. Magnolia Petroleum Co.'s No. 2 Weeder, NE cor. NW NW, Section 22-21-2w, found a hole full of water at 5,283 feet, where it is shut down, but it is believed operations will be resumed in a few days.

Prairie Oil & Gas Co. and Washoma Petroleum Co.'s No. 1 Upperman, SW cor., Section 22-22-1, Noble County, a wildcat, was making good time drilling at 650 feet. Barnsdall Oil Co.'s No. 1 Mitch, NW cor. SW, Section 12-21-1, a wildcat, was drilling at 3,000 feet.

The producing wells in the area were holding steady. Magnolia Petroleum Co.'s No. 2 Young, NE cor. NW NW, Section 22-21-2w, is flowing 650 bbls. a day from the Misener sand at 5,100-05 feet, under proration. Same company's No. 4 Sams, SE cor. SW SW, Section 15-21-2w, is making 250 bbls. a day on the pump after being plugged back to the Misener sand at 5,185-95 feet.

Tom Slick Oil Co. and The Texas Company's No. 1 Jones, SE cor. NW, Section 24-17-2w, is believed to be drilling in the Wilcox sand at 5,635 feet. The Simpson was based at 5,631 feet with nothing showing in the test.

The Eason Oil Co.'s No. 1 Katschor, SW cor. NE SW, Section 34-17-4w, Logan County wildcat, found the Layton sand at a total depth of 4,942 feet, where it is flowing 265 bbls. on the gauge of November 15. The well has been completed at this depth.

Kingwood Oil Co. and Mid-Continent Petroleum Corp.'s No. 1 Jacobs, SE cor. NE NE, Section 21-12-11, Okfuskee County, had 1,200 feet of oil in the hole from the Wilcox sand at 3,475-94 feet. The well is two locations north of the largest well in the pool, Sheldon Oil Co. and others' No. 1 Jacobs, which flowed 640 bbls. the first 24 hours when completed. The Kingwood Oil Co. and others' No. 1 Jacobs will probably be drilled deeper into the Wilcox sand where the big pay is expected. The rich oil sand was found 31 feet in the Wilcox sand in the Sheldon Oil Co.'s well.

20 Gravity Oil in Creek County

Peerless Oil & Producing Co. and others' No. 1 Posey, NW cor. SW SE, Section 17-16-8, Creek County wildcat, swabbed 1,500 bbls. of 20 gravity oil from the Dutcher sand at 3,300 feet. The operators may drill it deeper as it is believed it will be impossible to find a market for the low gravity oil at the present time.

The wildcat test of the Indian Territory Illuminating Oil Co.'s No. 1 Blake, SW cor. NW, Section 3-10-21, Haskell County, in southeastern Oklahoma, found sand at 2,520-37 feet and another hard sand at 2,637-60 feet, with nothing showing. The test is a wildcat and is being drilled on a large block of acreage assembled after a considerable amount of geophysical work had been completed in the area.

New Oil Wells in Oklahoma City

During the last seven days ending November 15, eight wells were completed in the Oklahoma City Field. It is the smallest number of completions for one week in several months. Cromwell Franklin Oil Co.'s No. 33 Trosper Park, SW cor. NE SW, Section 12-11-3w, flowed 3,046 bbls. in eight hours from sand at 6,263-6,306 feet. Indian Territory Illuminating Oil Co.'s No. 5 Pasadena, NE cor. SW, Section 14-11-3w, flowed 16 bbls. in 10 minutes and then went dead. The sand was found at 6,505-50 feet. Same company's No. 1 Dillin, NE cor. SE NE, Section 26-11-3w, made 80 bbls. in one hour and 177 bbls. in 24 hours from sand at 6,503-42 feet. Same company's No. 3 Lawrence Place, NE cor. SW NE, Section 15-11-3w, flowed 5,877 bbls. in eight hours from sand at 6,340-6,466 feet. Same company's No. 6 State Land, SW cor. NE NW, Section 36-11-3w, made 204 bbls. in one and one-half hours from sand at 6,505-6,692 feet. Jones Brothers and others' No. 1 Scruggs, SE cor. NE SE, Section 35-12-3w, made 105 bbls. in 50 minutes and 100,000,000 feet of gas a day from sand 6,190-6,398 feet. Denver Producing & Refining Co.'s No. 1 Harvey, SE cor., Section 15-11-3w, made 1,340 bbls. in three hours from sand at 6,335-6,589 feet. Phillips Petroleum Co.'s No. 1 Roden, SW cor. NW, Section 2-11-3w, flowed 2,593 bbls. in one hour and five minutes from a total depth of 6,450 feet in sand.

Oklahoma City Oil Shipments

The total shipments from the Oklahoma City Field for the week ending November 10, were 624,001 bbls. The daily average shipments by companies were as follows:

Company—	Dly. av.
Empire	23,786
I. T. I. O.	3,015
Magnolia	13,737
Oklahoma	16,851
Prairie	11,031
Stanolind	12,785
Shell	1,196
Tidal	2,212
Gulf States	2,240
Peacock & Peveto	57
Century	1,624
Cushing Refining	609
Total	89,143

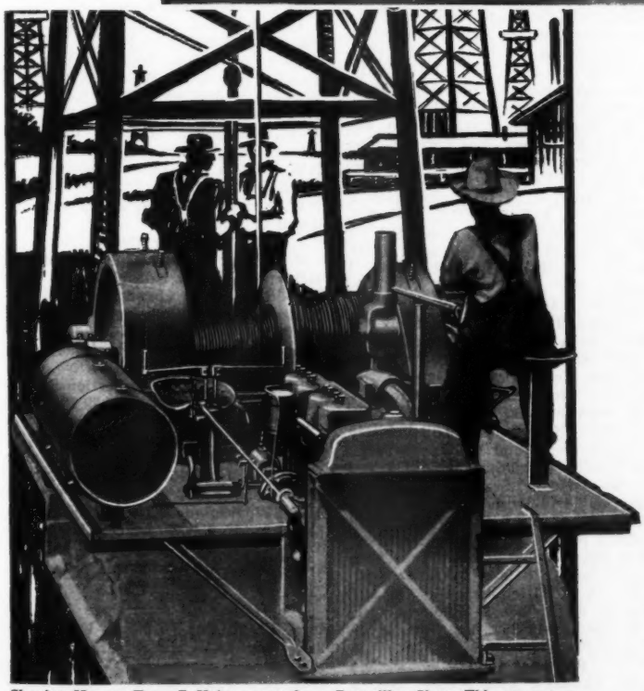
Oklahoma City Production

The following wells were on production during the seven days ending November 10, in the Oklahoma City Pool, under the proration orders. All other wells were shut in and will be opened and produced according to the curtailment plan.

	S.T.R.	No. wells	Bbls.
Anderson-Prichard:			
Gibbons	1-11-3w	4	27
Graham	2-11-3	1	191
Habegger	14-11-3	1	41
Key	2-11-3	1	96
Moore	2-11-3	1	181
Pest House	2-11-3	2	615
Roosevelt Place	2-11-3	5	441
Century:			
Barr	10-11-3	1	480
Continental:			
Sudik	6-10-2	4	976
Cromwell-Franklin:			
T. Park	13-11-3	50	6,815
Denver P. & R.:			
Harvey	15-11-3	1	60
Hall-Briscoe:			
Holmes	10-11-3	4	3,712
Lindsey	14-11-3	3	1,116
Heeman-Coe:			
Cunningham	1-11-3	2	558
I. T. I. O.:			
Banta	18-11-2	1	6
Billen	26-11-3	1	37
Bod. Anderson	30-11-2	3	26
Bodine, A.	24-11-3	6	109
Brokaw, A.	13-11-3	4	5[illegible]
Brokaw, C.	13-11-3	4	61
Butterfield	11-11-3	1	728
Button	19-11-2	5	117
Emmerson, N	30-11-2	11	261
Farley, L.	19-11-2	4	41
Ferndale, Comm.	11-11-3	4	2,440
Hammer	11-11-3	2	285
Johnson	25-11-3	3	197
Jones, H. W.	1-11-3	4	651
Jones	31-11-2	14	802
Jones, Comm.	1-11-3	4	2,069
Knox, May	14-11-3	4	1,762
K. Henning	24-11-3	3	16
Lawrence Place	15-11-3	2	1
Lemmon	11-11-3	2	66
Magnolia Heights	14-11-3	1	96
M. K. & T.	35-12-3	4	282
Mt. Vernon Heights	15-11-3	1	188
Okla. State L.	36-11-3	7	363

(Continued on Next Page)

HOPPER
PORTABLE PULLING MACHINE



Showing Hopper Type C Hoist mounted on Caterpillar Sixty. This same type hoist can be mounted on Caterpillar Thirty if a smaller unit with less power is desired.

A Product With Experience Back of Its Advanced Features

Experience is all important in building oilfield equipment that stands the gaff. Hopper has been building hoists exclusively for the past fifteen years and offers the all-important interchangeability in all hoists of the same sizes.

Mounted on a Caterpillar Sixty the Type C Hoist offers a line capacity of 6,000 feet of ¾" line or 10,000 feet of ½" line. Transported or driven by a Caterpillar, it has a special independent transmission with three forward and one reverse speeds on the drum. The drum is controlled by two equalized 8"x36" brakes, one hand operated, the other handled with the foot brake lever. These brakes have a separate release which insures free spinning of the drum.

The drum itself is of one piece cast-steel with a split adjustable divider flange in the center for storing excess sand line and is roller bearing mounted. It will handle tubing, baling and cleaning and other production work on wells up to 5,000 feet using 3" tubing.

HOPPER MACHINE WORKS, Inc.

Bakersfield, California

Cable Code "Hopper"

Please send me complete information on your Type C Portable Hoist. I am interested in hoists for wells of _____ depth using _____ inch tubing.

Name _____

Address _____

Company _____

	S.T.R.	No. Well	Bbls.
Pasadena Heights	14-11-3	4	796
Peterson, Sad	25-11-3	8	166
Precure, E.	11-11-3	2	299
Rensimer	14-11-3	1	802
Salasman	32-11-2	5	19
Sudik	31-11-2	11	4,056
Theimer, E.	12-11-3	3	18
Thom. Fuzzell	13-11-3	3	94
Trosper	13-11-3	10	1,185
Trosper, Clar.	14-11-3	4	1,675
Trosper, E.	14-11-3	2	796
Trosper, H. G.	14-11-3	5	714
Trosper, L.	12-11-3	2	520
Unsell, M.	23-11-3	6	272
Viewpoint	10-11-3	2	618
Warner, Farley	23-11-3	3	418
Williamson, Can.	24-11-3	2	624
I. T. I. O. et al:			
Boulevard, Add.	14-11-3	1	183
Mabee:			
Kedberg	2-11-3	1	33
Mid-Kansas:			
Browning	18-11-2	2	10
Fortson	24-11-3	5	89
Mollman	23-11-3	4	417
Tros-Browning	18-11-2	1	87
Trosper, D. B.	19-12-1	1	182
Minnehoma:			
Pugh	2-11-3	1	1,541
Oils, Inc.:			
Ross	2-11-3	1	2,289
Phillips:			
Harrell	2-11-3	1	35
Plains:			
Saddler	12-11-3	1	29
Plains-Denver:			
Whitten	14-11-3	1	373
Prairie-Slick:			
Hiddleston	19-11-2	7	122
Sigman	32-11-2	7	632
Shell:			
Egermeir	23-11-3	1	212
Petty	30-11-2	7	70
Sinclair:			
S. Land No. 54	36-11-3	16	2,591
S. Land No. 67	36-11-3	4	971
Venci	31-11-3	16	2,967
Sinclair-Amerada:			
Kinter	30-11-2	10	18
Sinclair:			
Donnell	23-11-3	1	253
Skelly:			
Dunn	1-11-3	1	664
Skelly et al:			
Dillon	2-11-3	2	543
Ainsworth	10-11-3	4	439
Hurt	2-11-3	1	824
Hoops	31-11-2	8	896
Tanner	10-11-3	2	135
Slick, T. B.:			
Bailey	1-11-3	1	497
Classen	2-11-3	3	1,218
Foote	2-11-3	2	7
Frost, C. G.	10-11-3	1	257
Glidden	13-11-3	2	32
Moore	2-11-3	1	97
Slick, T. B., et al:			
Alexander	2-11-3	2	344
Danreuther	2-11-3	3	303
Dunivan	1-11-3	1	3,271
Page	14-11-3	2	34
Townsend	1-11-3	2	49
Hoops	31-11-2	8	491
Hussman	29-11-2	1	9
Wirt Franklin:			
Holder	2-11-3	2	67
Lowery	12-11-3	10	3,118
Theimer	2-11-3	12	5,127
Theimer-Butt	11-11-3	1	282
Wright	2-11-3	3	839
Wright-Smith:			
Smith	2-11-3	2	3
Total		638	71,304
Last week		634	81,442

New wells 4. Decrease 10,138 bbls. Average per well for pool, 111 bbls.

Greater Seminole Production

The production from the Greater Seminole area for the week ending November 10, was as follows:

Company—	Wells	Bbls.
Little River	273	34,880
East Little River	83	11,625
Carr City	71	13,194
Maud	135	3,177
Mission	92	8,133
Bowlegs	279	14,456
Earlsboro	281	30,932
South Earlsboro	27	11,533
East Earlsboro	160	19,254
Seminole	257	14,371
East Seminole	33	2,256
Searight	85	6,843
Allen	273	13,825
Asher	26	1,043
Wanette	42	9,885
Konawa	103	16,666
Sasakwa	51	4,571
St. Louis	482	22,908
Total	2,853	219,557

Greater Seminole Shipments

The pipe line shipments from the Greater Seminole area total 195,353 bbls. for the week ending November 10. The daily averages from the various pools were as follows:

Company—	Seminole bbls.	Asher Pearson, St. Louis bbls.	Konawa bbls.
Barnsdall	2,712	.....	.....
Champlin	6,092	.....	577
Consolidated	.....	1,186	.....
Cosden	6,555	.....	3,321
Deep Rock	2,147	1,018	.....
Empire	3,705	.....	.....
Gulf	26,996	5,335	1,403
Magnolia	7,121	5,870	.....
Oklahoma	19,146	135	300
Prairie	12,649	3,582	3,495
Prod. & Refs.	1,665	.....	.....
Pure	4,291	.....	.....
Shell	4,593	634	788
Stanolind	23,903	6,270	3,076
Texas	9,709	4,219	2,552
Tidal	8,767	3,670	.....
White Oak	356	.....	.....
Total	140,422	32,019	15,422
Tank cars	2,690	2,800	
Grand total	143,112	34,819	

Carter County

The Texas Company is erecting the rig for No. 4 Eaves, NW cor. SE SW, Section 24-1s-3w. Magnolia Petroleum Co.'s No. 1 W. H. Hooker, SW cor., Section 13-1s-3w, has been completed for 614 bbls. in sands 2,133-2,400 feet.

Garvin County

Mallernee Oil Co. made location for No. 1 Phillips, NE cor. SW, Section 24-2-2w.

Grady County

Natural Gas Producing Corp.'s No. 1 Barry, CWL NW NE, Section 25-4-8w, is rigging up rotary tools. No. 2 Ridley, SW cor. NW SW NE, Section 25-4-8w, has been completed for 5,000,000 feet of gas in sand 1,906-30 feet.

Hughes County

McGee and others' No. 2 Piller, NE cor. NW NW, Section 12-9-10, has been completed for 2,000,000 feet of gas in sand 1,179-84 feet. Mid-Kansas Oil & Gas Co.'s No. 1 Eason, NE cor. SW SW, Section 6-9-11, is dry and abandoned at 4,045 feet.

Marshall County

W. E. Simms and others' No. 1 Sparlin, NW cor. NE, Section 2-6s-6, is drilling at 240 feet.

Osage County

The Prairie Oil & Gas Co. made location for No. 1, SE cor. NW SE, Section 11-24-6. Peters Petroleum Corp. has the rig up and tools in for No. 1, SW cor. SE NE, Section 11-25-9. Turman Oil Co. has built the rig for No. 5, CWL SW, Section 11-21-8. J. E. Cooper made location for No. 1, NW cor. NE SE SE, Section 26-21-10. Indian Territory Illuminating Oil Co.'s No. 440, NE cor. SE SW NW, Section 5-26-12, has been completed for 7,250,000 feet of gas in lime 1,710-49 feet. Oklahoma Natural Gas Corp.'s No. 1,813, SE cor. NW SW, Section 20-21-11, made 2,000,000 feet of gas from Bartlesville sand 1,823-58 feet.

Pawnee County

Bryan Petroleum Co.'s No. 2 Johnson, NE cor. SE, Section 27-20-9, has been deepened from 2,164 feet to 2,176 feet, then plugged back to 2,164 feet and pumped 7 bbls.

Pontotoc County

Dixie Oil Co.'s No. 1-B Haynes, SW cor. NE SW, Section 32-5-5, Bebee Pool, has been completed for 58 bbls. in sand 2,535-40 feet. Superior Oil Corp.'s No. 8 Mauldin, SE cor. NW NW, Section 32-5-5, made 50 bbls. from sand 2,777 feet after plugging back from 2,794 feet.

Pottawatomie County

Deep Rock Oil Corp.'s No. 3 Gibson, SW cor. NE, Section 23-6-3, West Asher Pool, has been completed for 3,035 bbls. in sand 3,427-51 feet. Wilcox Oil & Gas Co.'s No. 7 Warren, NW cor. NE SW. Section 23-6-3, made 1,490 bbls. from sand 3,481-3,500 feet.

Creek County

O. M. Irelan and others' rig is up for No. 1-A Bruner, CEL NW NW, Section 27-18-11. S. W. Anthony's No. 1-A Felix, NE cor. NW SW NE, Section 9-16-12, is spudding. Deep Rock Oil Corp. and Turman Oil Co.'s No. 3 Lewis, NE cor. SW SW, Section 10-15-8, has been completed for 90 bbls. in sand 3,768-3,802 feet. Deep Rock Oil Corp. and Billingslea's No. 4 Warnarkee, SE cor. SW SW, Section 15-15-8, made 115 bbls. from sands 2,330-38 and 3,240-43 feet. Tibbens Oil & Gas Co.'s No. 4 Sneed, SW cor. NE NW, Section 18-14-9, has been completed for 35 bbls. in sand 1,185-91 feet.

Latimer County

Mid-Western Oil & Gas Co.'s No. 1 Bullock, C N half SW, Section 3-6-19, is spudding.

Muskogee County

Beland Oil Co. has a machine on the location for No. 11 H. James, NW cor. SE SE, Section 18-14-17. E. Price and others' No. 1 James, NE cor. SW SE, Section 18-14-17, is rigging up. Jess Rebold and others' No. 1 Miller, SE cor. NE NE, Section 32-13-19, is a machine. John Aggas' No. 1 Lee, NW cor. SW SW. Section 27-16-15, has been abandoned at 2,160 feet. C. D. Bradley's No. 1 E. Sango, NE cor. SE, Section 12-15-17, is dry and abandoned at 1,952 feet. Cooper & Beam's No. 1 McIntosh, SW cor., Section 3-15-18, has been abandoned at 1,010 feet. E. Mills and others' No. 1 Caesar, NE cor. SE, Section 7-15-18, has been abandoned at 1,020 feet. E. B. Grubbs and others' No. 1 Bemo, NE cor. NW NW SE, Section 8-15-18, is a dry hole at 903 feet. Western D. & E. Co.'s No. 1 Ingram, NW cor. NE SE, Section 9-15-18, has been abandoned at 1,016 feet. E. Mills and others' No. 1 McIntosh, SE cor. NE NW, Section 20-15-18, made 1,750,000 feet of gas from sand 1,299-1,323 feet.

Logan County

The Prairie Oil & Gas Co. and T. B. Slick's No. 1 Simms, NE cor. SW SE, Section 22-17-1, has been abandoned at 5,233 feet.

Okfuskee County

Dempsey & Wise made location for No. 1 Webster, SE cor. SW NE, Section 3-12-12. Champlin Oil & Refining Co.'s No. 1 Bell, SW cor. NW NE, Section 23-10-11, has been abandoned at 4,073 feet.

Okmulgee County

William Sherry and others' No. 1-A Pense, C SE NE, Section 20-16-11, is spudding. Denton & Marshall's No. 1-A Rentie, CWL NW SW, Section 13-14-14, is rigging up. Kirkland & Son's No. 5 Brown, CNL SW SW, Section 9-15-13, has been completed for 12 bbls. in sand 2,506-12 feet. F. D. Misener's No. 5 Colbert, NE cor. SE SE, Section 15-14-14, made 10 bbls. from sand 1,807-09 feet.

Oklahoma County

Thomas B. Slick estate made location for No. 1 Whitfield, SW cor. SE SE, Section 34-12-3w. Ambassador Oil Co.'s No. 1 Unknown, NE cor. NW NW NE, Section 2-11-3w, is a cellar. Anderson & Prichard made location for No. 1 Clark Community, NE cor. SE NW SE, Section 3-11-3w. Thomas B. Slick estate staked location for No. 2 Frisco, SE cor. NE NE SE, Section 3-11-3w. Thomas B. Slick estate and Phillips Petroleum Co. made location for No. 1 Owens, NW cor. SE NE, Section 3-11-3w. Wirt Franklin Petroleum Corp. made location for No. 1 Schilling, NW cor. NE SE SW, Section 10-11-3w. Phillips Petroleum Co. made location for No. 1 Temple, NW cor. NE NE NW, Section 10-11-3w, Block 2, Eckroat Addition. Indian Territory Illuminating Oil Co. made location for No. 4 View Point, SW cor. SE, Section 10-11-3w. Anderson & Prichard's No. 2 Pesthouse, NW cor. SW NW, Section 1-11-3w, has been completed for 7,119 bbls. in 16 hours in sand 6,075-6,432 feet. Indian Territory Illuminating Oil Co. and others' No. 8 Theimer, NW cor. SE, Section 1-11-3w, made 169 bbls. in eight hours from sand at 6,350 feet after plugging back from 6,757 feet. Anderson & Prichard's No. 1 Keys, CWL NW NE, Section 2-11-3w, has been completed for 7,400 bbls. in 16 hours from sand 6,198-6,530 feet. McMahon and others' No. 1 McKeehen, SW cor. NW SW NW, Section 2-11-3w, has been abandoned at 915 feet. Indian Territory Illuminating Oil Co. and others' No. 1 View Point, NE cor. SW SE, Section 10-11-3w, made 27,991 bbls. from Detrital sand 6,315-6,430 feet. Cromwell-Franklin Oil Co.'s No. 33 Trosper Park, SW cor. NE SW, Section 12-11-3w, made 3,046 bbls. in eight hours from sand 6,264-6,306 feet. Indian Territory Illuminating Oil Co. and others' No. 4 Hugh Trosper, NW cor. NE NE, Section 14-11-3w, has been completed for 6,296 bbls. in 16 hours from sand 6,160-6,478 feet. No. 4 May Knox, NW cor. NE SE, Section 14-11-3w, has been completed for 6,888 bbls. in sand 6,320-69 feet. The Prairie Oil & Gas Co. and Thomas B. Slick's No. 2 Hiddleston, SE cor., Section 19-11-2w, has been abandoned at 7,260 feet.

Pittsburg County

C. O. Cannady and others' No. 1 Travis, C SW NE, Section 15-7-14, is a rig going up. Central States Light & Power Co.'s No. 2 Carney, SW cor. NE, Section 9-7-18, is drilling at 1,500 feet. No. 1 Houston, NE cor. SW SE, Section 9-7-18, is drilling at 1,000 feet. Choctaw Gas Co.'s No. 1 Hayheim, NE cor., Section 16-7-18, is drilling at 1,000 feet. Public Service Co. of Oklahoma's No. 2 Carney, NW cor., Section 16-7-18, is spudding. No. 1 Carney, NE cor. NW, Section 16-7-18, has been completed for 8,000,000 feet of gas in sand 1,760-2,031 feet.

Seminole County

Carter Oil Co. made location for No. 7 Tewee, NE cor. NW NE, Section 14-7-6, Little River Pool. Barrett and others staked location for No. 1 Wilson, Block 140, Lot 16, Wewoka Townsite, SW cor. SE SE, Section 19-8-8. Crosbie, Inc.'s No. 1 Robinson, NW cor. SE NE, Section 30-8-8, Block 14, Hamilton Addition, Wewoka Townsite, is rigging up. Magnolia Petroleum Co. has the rig on the ground for No. 3-A Harjo, NW cor. NE NE, Section 14-7-6, Little River Pool. Gypsy Oil Co.'s No. 1 Pompey, SW cor. SE NW, Section 29-9-6, Earlsboro Pool, has been completed for 4,012 bbls. in Wilcox sand 4,114-41 feet. The Texas Company's No. 1 Sandlin, NE cor. NW SW, Section 29-9-6, made 2,805 bbls. from Wilcox sand 4,110-39 feet. Gypsy Oil Co.'s No. 5 Coker, NW cor. SW, Section 2-8-5, Carr City Pool, has been completed for 1,498 bbls. in Wilcox sand 4,191-4,210 feet. No. 1 L. Tiger, SE cor. SW NW, Section 3-8-5, flowed 3,412 bbls. from Hunton lime 3,926-70 feet, total depth 4,089 feet. Empire Oil & Refining Co.'s No. 2-B Fish, NW cor. NE SE, Section 19-7-8, has been completed for 526 bbls. in sand 3,033-3,127 feet. Carter Oil Co.'s No. 3 H. Wilson, SW cor., Section 12-7-6, Little River Pool, has been completed for 1,704 bbls. in Gilcrease sand 3,125-90 feet. Harris and others' No. 2 Fleet, SW cor. NE, Section 29-6-6, Konawa Pool, made 605 bbls. from sand 2,835-64 feet.

Stephens County

Meridian Gas Co. has the rig up for No. 1 Melton, SW cor. NW SE, Section 30-4-7w. Carter Oil Co. is moving the tools in at No. 1 Toney, NW cor. NE SW, Section 27-2s-7w. Sykes and others' No. 2 Blake, NE cor. SW, Section 16-1s-8w, has been completed for 19 bbls. in sand 2,145-53 feet, total depth 2,157 feet. Harris & McNeil's No. 1 Parker, SW cor. SE NE SE, Section 11-2s-8w, made 100 bbls. in sand 2,049-51 feet. Pace and others' No. 3 Dilley, SE cor. NE NW SW, Section 27-2s-7w, has been completed as a 100-bbl. pumper in sands 1,505-15 feet.

Tulsa County

Campbell and others' No. 1 Grayson, SE cor. NE NE NW, Section 4-19-14, is rigging up. Mays Drilling Co.'s No. 5 Brooks, SE cor. NW SE NW, Section 2-18-13, is drilling at 625 feet. No. 1 Hollingsworth, NW cor. SW, Section 10-18-15, is drilling at 100 feet. Preston and others' No. 2 Perryman, NE cor. NW NW, Section 4-17-14, is spudding. Mays Drilling Co.'s No. 1 Primus, CEL SW NW, Section 15-19-14, is dry and abandoned at 1,302 feet.

Wagoner County

J. McCutcheon and others' No. 1 M. Roberts, CWL E half NE SW, Section 9-19-16, has been abandoned at 551 feet. Western D. & E. Co.'s No. 6 Barnett, NE cor. SE NE, Section 34-18-17, has been completed for 85,000 feet of gas in sand 265-82 feet. A. H. Secrist's No. 2 Barnett, SW cor. SE NW, Section 34-17-16, has been completed for 3,959,280 feet of gas in sand 832-34 feet. Brasheers and others' No. 1 Kannard, NW cor. NE NE, Section 6-17-17, made 884,520 feet of gas from sand 1,008-15 feet. J. McCutcheon and others' No. 3 Brown, NE cor. NW NW SW, Section 36-16-17, has been completed for 15 bbls. in sand 873-89 feet.

KANSAS FIELDS

(Continued from Page 44)

sand 720-29 feet. Roth & Faurot's No. 2-A Brant, SW cor. SE SW NE, Section 12-32-4, made 1,000,000 feet of gas from sand 722-38 feet.

Ellsworth County

Slick, Pryor & Lockhart and Darby

Petroleum Co. and others' No. 1 Heiken, NW cor., Section 25-17-10w, has been completed in silicious lime 3,218-43 feet, making 359 bbls. in 4½ hours.

Greenwood County

Aladdin Petroleum Co. and Phillips Petroleum Co.'s No. 3 Harris, NW cor. NE SW, Section 19-22-11, is spudding. Empire Oil & Refining Co. and Rhodes' No. 1 Braddock, SW cor. NW, Section 23-22-12, is a rig under construction. Patterson and others' No. 1 Sterling, SW cor. SE, Section 25-22-11, is spudding. Smith and others' No. 1 Hess, NW cor. SW NE, Section 34-22-11, is rigging up. York State Oil Co.'s No. 11 Westcott, CWL E half NW, Section 33-22-11, has been completed for 100 bbls. in sand 1,930-2,004 feet.

Harvey County

Shell Petroleum Corp. and McPherson Oil & Gas Development Co.'s No. 1-B Houry, SW cor. NE SW, Section 11-23-2w, which was producing 6,500,000 feet of gas at 2,955 feet, has been deepened to 3,000 feet and abandoned. Jones and Shell Petroleum Corp. made location for No. 1 Lehmann, C NW NW, Section 36-22-2w.

Lyon County

Phillips Petroleum Co. and others' No. 1 Barr, SW cor. NW NW, Section 29-20-10, has been abandoned at 2,498 feet.

Marion County

Youker and others' No. 3 Riffel, SE cor., Section 10-17-4, is a rig going up.

McPherson County

W. C. McBride, Inc.'s No. 1 Giffin, C NE SW, Section 14-19-2w, is a rig going up. United Petroleum Co. and Shell Petroleum Corp.'s No. 1 Smith and others, NW cor., Section 29-19-1w, is moving in. Shell Petroleum Corp. is moving in tools for No. 1 Anderson, SE cor. NW, Section 30-19-1w. Jones and Shell Petroleum Corp. staked location for No. 1 Holmes, NE cor. SE NW, Section 12-20-2w. Otstot and others' No. 1 Munn, NW cor. SW SW, Section 6-20-1w, is a rig on the ground. Washoma Oil Co. and Shell Petroleum Corp.'s No. 1 Meeks, NW cor. NE SW, Section 7-20-1w, is moving in. Jones and Shell Petroleum Corp.'s No. 1 Peterson, NW cor. SW SW, Section 7-20-1w, is a slush pond. W. C. McBride, Inc.'s No. 1 Whitwright, NE cor. SW, Section 30-19-1w, is an old well rigging up to deepen from 3,011 feet.

Morton County

Missouri-Kansas Pipe line Co. is drilling a water well for No. 1 Phillips, C SE, Section 16-35-39w.

Rice County

Slick, Pryor and Lockhart's No. 2 Schurr, NE cor. NW SW, Section 21-20-10w, Raymond Pool, has been completed for 477 bbls. in 4½ hours in silicious lime 3,307-34 feet.

Rush County

The Prairie Oil & Gas Co. and others' No. 1 Leiker, NW cor. SW SW, Section 5-16-18w, has been abandoned at 3,758 feet.

Sedgwick County

Magnolia Petroleum Co. is erecting the rig for No. 1 Vickers, NW cor. SW SW, Section 17-27-2, Eastborough Pool. National Refining Co. and others' No. 3 Murdock, NE cor. SE SE, Section 18-27-2, is a location. Derby Oil Co. made location for No. 5 Eastborough, NE cor. NW NE, Section 19-27-2. Fisher & Lauck's No. 2 Shaffer, NE cor. SE NW, Section 30-27-2, is a rig. E. B. Shawver is building the rig for No. 2 Robbins, SE cor. NW SW, Section 21-28-1. National Refining Co. and others' No. 2 Murdock, SE cor., Section 18-27-2, has been completed for 1,622 bbls. in chat 2,938-60 feet. E. B. Shawver's No. 1 Fee, SE cor. SW SE, Section 18-27-2, made 500 bbls. from chat 2,966-78 feet. Fisher & Lauck's No. 7 Trustee, SE cor., Section 19-27-2, has been abandoned at 3,280 feet. No. 8 Trustee, NW cor. NE SE, Section 19-27-2, made 732 bbls. from chat 2,947-63 feet. Derby Oil Co.'s No. 4 Eastborough, NE cor. NW NE, Section 19-27-2, produced 2,355 bbls. from chat 2,960-71 feet. Magnolia Petroleum Co.'s No. 2 Wheeler, NW cor. NE NE, Section 19-27-2, has been completed for 720 bbls. in chat 2,948-66 feet. Derby Oil Co.'s No. 2 Rimel, NE cor., Section 30-27-2, has been abandoned at 3,420 feet.

Stevens County

Sidwell & Kuhn made location for No. 1 Jenkins, C SW, Section 10-34-39w. Western Petroleum Co.'s No. 1 Ponder, C NE, Section 10-32-38w, has been completed for 7,143,000 feet of gas in sand 2,530-2,709 feet.

Sumner County

G. W. Long and others made location for No. 2 Rex, SE cor. NW SE, Section 22-33-3w. Washoma Petroleum Co.'s No. 1 Stout, NW cor. SE, Section 11-31-2, has been abandoned at 2,345 feet. Shell Petroleum Corp.'s No. 11 Churchill, SW cor. NE SW, Section 25-31-2, made 25 bbls. at 1,867 feet.

MICHIGAN FIELDS

(Continued from Page 56)

out three permits: John B. Raynor's No. "C" 4, SW SW, Section 1-14n-3w, Chippewa Township, Isabella County; B. G. Davis' No. 3, SE SE, Section 2-14n-3w, also Chippewa Township, and George L. Burrows and others, NE SE, Section 3-14n-3w.

The Crude Oil Co. and the Smith Petroleum Co. have combined to drill No. 1 Smith, SE NW, Section 26-3n-4e, Howell Township, Livingston County. C. L. Bullock of Muskegon, is rigging up for this well.

Reports from Howell tell of a city water well drilled in the SE cor., Section 36, Howell Township, from which 2 bbls. of live green oil were bailed after it had stood with about 200 feet of fresh water in the hole for 16 days. Berea was topped at 94 feet with shows at 141 to 146 and 170 to 176 feet.

A gas show estimated good for 250,000 feet was struck in the Crude Oil Co. and Empire Oil & Refining Co.'s No. 1 Wilkinson, NE NE SW, Section 22-3n-4e, Howell Township, Livingston County.

The Glennbrook Oil Co.'s No. 1 Glen, SW SW, Section 32-1n-4e, Putnam Township, is another drilling well in Livingston County.

Mason County

Oil standing more than 2,900 feet in an old Sylvania gas well has aroused new interest recently in a group of wells and future possibilities in Logan Township, Mason County, about 50 miles north of the Muskegon oil field. The well is the Logan Oil Co.'s No. 1 W. K. Young Brothers, SE SW, Section 9-17n-15w, which came in as about a 250,000-foot gasser in the spring of 1928.

Some time ago the well was diminishing in gas pressure. Now it is known it was oil replacing the gas. The oil rose 140 feet within a week and is now standing to a total height of about 2,900 feet in the well. The oil tests 53 gravity, is light colored and high in gasoline content.

Thompson Brothers, former Muskegon operators, have acquired the lease and the well originally drilled by Taggart and Welch, independent operators, known as the No. 1 H. Barnett, NE SW Section 10-17n-15w, Logan, Mason County, and are now deepening it.

Seven permits to deepen former Dundee oil or gas wells at least 200 feet in search of gas sands struck two weeks ago in the first deep test in the Muskegon oil field have been granted.

Two new producers of oil and gas, respectively, have been completed in the Dundee formation in the proved Muskegon Field. The Lima Oil Corp.'s No. 9 Louis P. Haight, SW SW SW Section 9-10n-16w, made 50 bbls. initial at a total depth of 2,039 feet. Dundee was topped at 1,996 feet and the best pay sands at 2,025 feet.

The Blue Arrow Petroleum Co.'s No. 1 A. Workman, SW NE Section 8-10n-16w, Muskegon Township, made about 600,000 feet of gas at a total depth of 1,994 feet. Dundee was encountered at 1,976 feet.

The Camusk Oil Co. has started its No. 2 Paulson-Barlow, SE NE Section 8-10-16w, Muskegon Township, and there is one other well on the Herman Heinz property which has not yet started drilling but has part of a rig on the ground.

SOUTHWEST TEXAS FIELDS

(Continued from Page 48)

east of the Charco Redondo Pool in Zapata County, E. E. Watts agent, No. 1 Gomez reached a total depth of 2,000 feet and is now plugging back to test a sand at 1,070-1,103 feet which looked pretty good for gas production when the drill hit it the first time.

Operations in the Escobas Pool have dropped to a point where at the close of the week there were no active tests drilling. There were four locations listed, three others with derricks up and three other tests standing, one at 100 feet, one at 335 feet and one in the sand at 1,236-51 feet and with casing parted.

Starr County Gasser

In Starr County the Los Olmos Oil & Gas Co.'s No. 1 Kelsey-Ruse has been completed for 4,000,000 feet of gas at 377 feet. Its importance is far in excess of its depth relatively for it is a new discovery. Starr County has one lone oil well and it has not been putting anything into the pipe lines. The Texas Company brought in a well north of Roma a few miles about two years ago. Since then the company has leisurely drilled some tests, all resulting in dry holes, at considerable distance from the discovery well. The company's No. 5-A V. G. Guerra in Share 305-C in sand at 3,541-3,670 feet tested seven joints of oil and mud and has set 6⅝-inch casing at 3,541 feet. It looks like it might be the second producer in the pool.

Brooks County

In Brooks County Southern Crude Oil Purchasing Co.'s No. 1 Holbien-Wormser is drilling at 4,932 feet. It is several miles south of the Lasater Pool which pool consists of two gas wells. The Southern Crude's test is now the only thing in that part of the county that is active.

In the southwestern part of the county Ed East abandoned his No. 2 Garcia at 400 feet and has made location for his No. 3. His No. 1 was a discovery gas well at comparatively shallow depth.

New Locations

Abandoned tests over Southwest Texas the past week were few and of no serious consequence. Of the new locations there are two propositions in northern Zapata County worth watching. O. W. Killam has made location on the Slator ranch northeast of where the National Oil Co. got important shallow showings in two tests drilled on the Don Adams land. It is No. 2 Slator. No. 1 was never carried very deep.

Lloyd Oil Corp. has paid $5,000 cash and agreed to drill a 2,000-foot test on a 3,000-acre block of leases purchased from Harry L. Fansler and south of the National's tests.

Southwest Texas Production

Daily average production of the pools in the Southwest Texas area for the week ending November 15 follows:

Bexar	206
Branyon	20
Bruner	14,986
Buchanan	142
Chapman	2,980
Dale	317
Duval	259
Darst Creek	37,362
Kingsville	120
Larremore	30
Luling	9,140
Lytton Springs	747
Manford	272
McMullen	30
Medina	22
Mirando	15,150
Normanna	30
Pettus	8,160
Rusk County	198
Saxet	58
Somerset	1,446
Yoast	290
Total Southwest Texas	91,956
Week ending November 8	103,236
Decrease	11,280

LA.-ARK. FIELDS

(Continued from Page 46)

of Mount Holly production in Ouachita County is making about 50 bbls. of fluid, 90 per cent water, from 1,873 feet, pumping with a small unit installed on the derrick floor. In the Fort Smith gas district of Sebastian County, Mansfield Gas Co. has completed No. 14 Fee, SE NE, Section 1-4-31, making 500,000 feet of gas, total depth 2,000 feet, and Ozark Natural Gas Co.'s No. 1 Bates, SE NW, Section 28-8-30, made 5,000,000 feet of gas at 240 pounds from 3,004 feet.

Burnham and others' No. 1 Burnett, M. H. Janes Survey of Bowie County, Texas, 4 miles southwest of Texarkana went out of Austin chalk at 3,095 feet and into the red beds at 3,145 feet and is shut down but is scheduled to go to 5,000 feet according to reports from Texarkana. J. C. Rogers did not run testing tool on No. 1 Lanier in the K. E. Welborn Survey of Cass County at 1,920-2,180 feet to test a gas show as expected and was coring sandy shale at 2,190 feet.

Mississippi Operations

The Jackson gas district in Hinds and Rankin Counties, Mississippi, was as inactive as the Shreveport district with no new locations, no completions and no particularly "hot" developments in drilling wells save that Gulf Refining Co.'s No. 1 Hamilton, SW SW, Section 12-5-1e, Rankin County, in proven territory, had 700 feet of water in the hole at 2,625-40 feet and is coring at 2,720 feet. Production is obtained in this area from around 2,500 feet. Several wells in both Hinds and Rankin Counties have pay string set and probably will test during the ensuing week. Louisiana-Mississippi Oil Co.'s No. 1 Case in Section 21-8-6. Lincoln County, shut down at 2,221 feet since the first of the year, is dropped from the report. The discovery well, Jackson Oil & Gas Co.'s No. 1 Mays, Section 2-5-1e, Hinds County, has been turned into the Jackson distributing system and is furnishing a maximum of 5,000,000 feet per day or about a quarter of the total consumption. It had an initial open flow of 2,000,000 feet from 2,480 feet but was recently revamped and brought back with an estimated 35,000,000 feet.

W. H. Munroe has been detailed by the United States Geological Survey to a six months' study of the Jackson district and has begun work on the survey

Daily average runs from the field again were practically stationary with those of last week, the net difference being an increase of 30 bbls. in total run of 95,980 bbls. Louisiana runs of 44,040 bbls. were an increase of 160 bbls. due to a gain of 525 bbls. in Zwolle shipments plus slight increases in one or two other pools but which was almost wiped out by declines of 185 bbls. in Caddo light, 145 bbls. in Sarepta-Carterville and 105 bbls. in Holly. Arkansas runs of 51,940 bbls. were 130 bbls. under last week's, all pools save Champagnolle which gained 50 bbls. showing a decline where there was any change at all, Stephens, Mount Holly, Lisbon and Bradley districts remaining stationary with last week's runs. Shipments from the several pools were:

NORTH LOUISIANA

Caddo, light	8,200
Caddo, heavy	2,735
Homer	3,360
Haynesville	5,230
DeSoto-Red River	2,885
Elm Grove	515
Bellevue	710
Cotton Valley	1,860
Urania	5,310
Pleasant Hill	480
Sarepta-Carterville	2,330
Zwolle	9,310
Holly	1,115
Total	44,040
Last week	43,880
Increase	160

ARKANSAS

El Dorado	3,920
Smackover, light	4,840
Smackover, heavy	35,710
Stephens	880
Nevada County	1,020
Lisbon	900
Champagnolle	3,480
Bradley	65
Mount Holly	75
Urbana	1,050
Total	51,940
Last week	52,070
Decrease	130
Both states	95,980
Last week	95,950
Increase	30

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Chicago Spot Market is More Active

But Business Was Not Evenly Distributed Largely Due to Prices Quoted. Furnace Oils Held Back by Warm Weather

By J. B. Waldo

CHICAGO, Nov. 17.—There was quite a bit of animation in the spot gasoline market today although the business was not evenly distributed. This spotty condition was due largely to the prices asked for U. S. Motor gasoline by the various concerns quoting. The jobbers are posted as to the market prices and it is difficult today to sell them at a higher price than 4½ cents for U. S. Motor gasoline Group 3 basis. The major refiners are still holding with but one known exception to the 5¼-cent price for the motor grade. Local offices admit their inability to secure orders at this price. The bulk of the orders were for small quantities, one or two cars, although a number of larger orders were placed. Most of these larger orders were for delivery over a brief period, while the smaller business was wanted at once. There is some complaint regarding the difficulty of securing prompt deliveries from certain refineries while others ships with their accustomed promptness and it is believed that the delay is due more to car troubles than to excess of business. The demand for the higher gravities continues slight.

Kerosene was not ordered in any quantity today, most concerns reporting no business in this product. Furnace oils moved in a small way but are held back by the continued warm weather. In the heavy fuels the demand was light, inquiries being few and for small quantities. The demand seems to be for the 18-22 and the 28-30 gravities possibly because these are both in light supply. The zero oils in all gravities are still firmly held and are certainly the ones which will be wanted badly when the colder weather does come. There was no movement of consequence in lubricating oils or refined stocks. The weather over the week end was cloudy with some rain but not cold and today is warm and bright enough for a summer day which does not help business in the oil lines.

Local Price Cutting

Complaint is heard of local price cutting at points from which little has been heard. All in the industry know of the situation at Detroit with its gasoline selling at 12 gallons for $1. A jobber from a small city in southern Minnesota stated that the price in his town was 12 cents a gallon with a 3-cent tax included. He claimed that the prices of gasoline in that territory ranged from 11 to 17 cents all including the tax. Much the same story was repeated from other states where in part at least there was heavy price cutting. The condition is apparently bad over a considerable portion of the Middle West and, according to the jobbers themselves, the real cause is too much gasoline. One of the jobbers from southern Minnesota claimed that an integrated company was making three-year contracts on the basis of 6¾ cents below the service station price wtih a fourth of a cent allowed to the jobber to be expended in advertising, and that in some cases at least they were giving local protection. This is almost unbelievable that any refining organization should give small jobbers such as are the ones who do the business in this district an agreement for three years which obligated the refiner to sell his gasoline at 7 cents under the service station price.

One thing brought out in talking with some jobbers, is that they have very little respect for the boyish type of salesmen who are sent to call on them. When a jobber has devoted 5 or 10 years or more in some cases to building up a business and making it a success, he does not relish having a young man call on him with practically no knowledge of the oil industry.

Markets Dull Last Week

The markets were dull last week and while there was a fair movement of gasoline including both contract and spot business, there were no rush of orders. The orders were for the most part for one or two cars with five-car orders quite a rarity. The jobber is continuing to buy for immediate needs only. Occasionally some jobber has a good day and runs out of motor fuel, but they figure that in the long run they are ahead by so doing. There are other considerations which have an influence in restricting some buying, and one is the tightening of credits both by the banks and the refiners.

One oil man when asked what was the going price during the past week said that so far as he could see, the price paid depended a good deal on the conscience of the buyer. If he were sufficiently "hard boiled" to offer a very low price he would probably get the gasoline. A limited number of refiners were definite in their refusal to sell at less than 4½ cents Oklahoma but material possibly not of the best specifications but which would be salable could be bought for less. The refiners were also quoting the jobbers directly which was another indication of slow demand. At the same time there was some complaint regarding slow deliveries which may have been as much due to the difficulty of securing tank cars as to the low condition of refiners' stocks. Towards the close of the week, the market was freely quoted at 4½ cents up for U. S. Motor gasoline with the major companies still asking 5¼ cents, spot, Group 3, for their U. S. Motor gasoline. One of the local refineries was naming a price of 5 cents to jobbers for its U. S. Motor gasoline, this price being quoted on Group 3 basis. A limited quantity of gasoline was offered towards the close of last week at 4⅜ cents, Group 3, which was of North Texas origin.

The higher gravities were in light demand although some sellers who seek for this trade stated that the demand was showing some increase since the first of the month. But they admitted that the demand was nothing like what it was formerly before the introduction of Ethyl Gasoline. There was very little change in the situation around Detroit. In some of the towns where the prices have been badly cut, the cause is traceable to the wide margins which permitted the jobber to make a bid for business, by cutting prices but still left him a profit. In Detroit the situation has been complicated by the intrusion of new and important interests and by the intense rivalry between certain companies. No one is making any money through their sale of gasoline. Many stations have been closed, some simply because they lost less money closed than running, others because of the nonpayment of the State gasoline tax. Natural gasoline is in about the same position as the regular material, being rather easy to buy at prices which are nominally lumped at 4½ cents for all grades.

Kerosene

Kerosene has been moving possibly a little better of late but the change is slight. The demand is not active but prices are fairly well maintained partly because of the comparative unimportance of the product. There has been little use made of the tractors this fall and the demand will not improve materially until the early spring unless something unusual happens.

Distributors of furnace oil are beginning to complain of the mild weather. The distributors say their sales are too small to permit them to go through with their contracts and are asking that cars be shipped later. One estimate was made that by the end of this month if there were no change, the refiners would have just about completed their October schedule of deliveries as outlined in the contracts. While this may be above the average there is no doubt that the shipments of nearly every refiner on contracts are somewhat behind. Several of the refiners who have made contracts to supply their regular customers with distillate and gas oil, report that they are not having much of any delays in delivering but as they had only a limited quantity to sell to their trade, the probability is that they are simply meeting the local consumption. Prices on all zero material are very firmly held. Supplies of zero gas oil, of distillate and of the lighter fuel oils which are now used almost exclusively for fuel for the automatic burners are very firmly held. Grades of oil which lack the full zero cold test or which are off in some respect quite frequently having a bad odor, are a little less in price but even these are steady at the ruling price. Some distillate has been offered at a little less than the prices previously charged but the quantity was not large nor the quality of the best. Supplies of these oils are not increased by the reduction of refining activity. Some of the refiners complain that they are obliged to run more gasoline than they like to right now, by the fact that they are committed to shipments of fuel or gas oils. The market for furnace oils is still strong and it is apparent that nothing but a large increase in the supply which seems very unlikely or a continued mild winter right through December, can give even a feeling of ease to the furnace oil market.

Industrial Fuel Oils

There is a certain amount of business coming through on the heavy industrial fuel oils but it is disappointing in volume to say the least. The greater bulk of the orders are for one or two cars and buyers are showing great care not to increase their inventories at this time. The approach of the first of the year with its annual inventory is being already felt in some concerns in which the management has already issued instructions to hold down all buying to the closest possible limits. The railroads are given credit for doing the very best that they can to take their monthly quotas under their fuel oil contracts but they are not using the full quantity of oil that they did last year during the good months and the best that they can do still leaves them about a month behind in taking out their contracts. The steel companies are so far behind on their contracts that it seems doubtful if they will catch up for a long time. The average manufacturer is taking just what he needs from week to week, buying in one, two or three-car orders. Under such conditions the fact that zero oils have been holding their price is a sign that the refiners are not forcing sales. During the past few days, there have been some lots of fuel oil that were offered at prices which seemed below the market and were less than the oil would have sold for a couple of weeks ago. Some of these lots of oil originated in the Cosden refinery but were not sold by the Cosden organization. There were quantities of 18-22 low sulphur and viscosity which sold at 50 cents a barrel and some cars of 14-16 with a higher viscosity and sulphur which sold at around 35 cents and some still heavier oil which was offered below 35 cents but which had such a high viscosity that it did not prove attractive. Other lots have been offered some of which was desirable in every way while some were not so useful to the average oil man who sells the manufacturers. Some of the lots were in expectation of the plant which offered them being closed down in the near future. The expectation here is that with colder weather, the market for the oils which can be used profitably for heating will hold but that there is danger of a surplus of oils which are only useful as fuel for large plants, steel companies and the railroads. These may be blended with lighter oils and made serviceable although the blending must be thorough to have the oils remain blended and not stratify when shipped.

Lubricating Oils

The lubricating oil situation remains much as it was with a light immediate demand and business in advance for next season less than was hoped for by a considerable percentage. The same lack of faith in prices is shown in lubricating stocks as in gasoline. Buyers are striving to avoid the experience of last summer and figure that the best way to do this is to buy what they must have to make a start and wait for developments before buying the remainder of their needs. Refiners have reduced their prices on various refinery stocks to meet competition and get their share of the business but so far the prices made are cut as soon as word is received of their being made. The lubricating oil market is a buyers' market in the broadest sense. When one of the largest refiners of lubricating oil stocks tells a customer that they will accept the buyer's orders at prices which have been named by the buyer, it certainly looks like a buyer's market. The demand for motor oils and for industrial oils and greases for immediate delivery is light and not improving at present in this market.

Tank Wagon Prices

There has been no general change in tank wagon prices in this territory. The sense of the local industry is that there will be no change unless there are some further developments such as additional crude changes in the Mid-Continent Field. The situation is so tense with respect to price cutting that something may happen at any time or on the contrary, the situation may run along as it has been doing for the past six months or more. In this city the success made by the so-called trackage stations has been so marked, that there is an eager search being made for possible sites on which to locate such a station. Judging from present plans there will be several additional trackage stations in this city by next summer. With no increase in the consumption the competition of these stations will be more keenly felt and may result in the closing of some of the smaller stations in the immediate vicinity of the trackage plants. It is admitted on all sides that there are too many stations in the average city or town and that all cannot survive the struggle for existence. The trouble has been in the past, that when one owner of a nonprofitable station is through and a change is made, the station is passed along into the hands of some other who is induced to try to make it pay. Some isolated stations in this city have passed through several hands. The idea of each owner is that he will be able to make the station pay, that the number of possible customers has increased and the good will of the station has grown so that it will not be a long or difficult task to put the station out of the red. This might be a reasonable argument, if it were not for changes in conditions not contemplated by the new owner. Some company has noted that there has been a station at that location for several years and argues that it must be a good location so the station has a rival station across the street or in the next block and neither of the stations can make any money. It

(Continued on Page 120)

Eastern Refiners Are Considering 1931

Contract Business on Diesel Oils for Next Year Now Being Written. Well Sustained Gasoline Demand Continues

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NEW YORK, Nov. 17.—With East Coast refined products markets in easy position, and a weak undertone indicated for the balance of the year, refiners are turning their attention to the more cheerful outlook for the coming year. Contract business on fuel and Diesel oils is being written for 1931, and interest in other oils for delivery during the coming year is also picking up.

Diesel oil contracts are being written on sliding scale contracts for next year, with $2.10 specified as "top" price for the year, while bunker "C" contracts are being written on a sliding scale basis with $1.35 a barrel top, both quotations being for oil in bulk f.o.b. refinery terminals. Buyers are protected under the terms of these contracts, however, by having their oil billed them at the price prevailing at time of delivery. Considerable business has already been written and refiners are working on additional contracts.

The city of New York awarded contracts for some of its refined petroleum requirements for 1931 this week, however, at prices not so promising, from the standpoint of the industry. A contract for fuel oil, totaling 450,000 bbls., was awarded at a price to net the refiner 98 cents per barrel at the refinery, while a contract for 1,750,000 gallons of gasoline was placed at 8 cents per gallon, delivered at various points throughout New York City during the coming year.

Further cuts in crude oil prices, together with the sharp decline in export prices for gasoline and kerosene in Gulf markets, contributed an easy feeling to the local market during the week, and the behavior of the spot market tended to add to this feeling.

Principal executives of the large companies have been in Chicago during the week, and, while news of the American Petroleum Institute gathering was constructive in character, it was not felt that any turn for the better could be looked for until well after the turn of the year. Reaffirmation of the industry's plan for conservation and curtailment both in the production and the refining branches, however, brought a better feeling to the market view as to the long-term prospects.

Gasoline

There has been a well-sustained demand for U. S. Motor gasoline during the past week, and the general going price remains unchanged at 7 cents per gallon in tank car lots at the refineries. The cut in the official posted quotation from 7¾ to 7 cents per gallon did not affect the market, inasmuch as the former level was more or less meaningless with the bulk of the business going through at the lower price. While 7 cents is being adhered to by the leading sellers in their tank car operations, some sellers are going under the new posted quotation by a quarter cent per gallon, and sales in the barge market are being made at levels considerably under 6¾ cents.

Weather conditions have been found favorable for sustained consumption during the week, and refiners have reported some pick-up in demand from jobbers, with new business at the 7-cent level of fairly large proportions.

The immediate outlook for the local market depends upon the ability of some of the weaker gasoline holders to distribute their surplus stocks with the minimum of disturbance to the general market structure. There are numerous reports going the rounds of large blocks of motor fuel offered for cash sale at prices substantially under prevalent levels, and until this gasoline is taken off the market, the undertone will remain definitely easy.

An encouraging development in this week's market was the proposal put forward by Shell interests, involving a 50 per cent cut in gasoline shipments from Dutch West Indies refineries of the group to Atlantic Seaboard and Gulf markets. This plan, if consummated, should substantially improve sentiment and actual conditions in the eastern market.

Tank Wagon Gasoline

Recent readjustments over a large part of East Coast territory have tended to put the tank wagon market in more stable condition, but the New York and New England market still awaits corrective action along these lines.

Posted prices for gasoline at service stations are still the exception, rather than the rule, at filling stations in city areas, and cutting is rather general both on the ordinary quality motor fuel and on premium grades as well.

Consumption is well maintained, and this, perhaps, is the saving factor in the situation. A prolonged spell of winter weather, sufficiently severe to materially retard consumption, would probably engender still more price cutting. The cause of this situation, of course, lies more in the multiplicity of retail stations than in actual selling competition by refiners in the wholesale market, and unless market conditions show substantial improvement, which appears unlikely in the near future, it will be a test of the survival of the fittest in the retail division of the market, with the stations of the large integrated companies best fortified to stand the siege.

Kerosene

While the posted price for water white kerosene is still nominally held at 6¾ cents in tank cars at refineries, only a quarter cent under the quotation for U. S. Motor gasoline, the general market is around 6¼ to 6½ cents with a fair amount of business going through at the inside level.

Cold weather in many sections of the East has helped to maintain demand for kerosene and jobbers are taking stocks in fairly large volume, although limiting purchases to actual requirements in most instances, due to the general belief that an early price cut is in sight.

There is no change in the tank wagon kerosene situation this week.

Lubs

Industrial demand for red and pale oils has picked up a little, refiners report, and tank car shipments have shown some gain. Prices remain unchanged on all grades.

The cylinder oil market showed no change during the week, the 15-cent cut on Pennsylvania Grade crude bringing the market to the lowest levels attained since November, 1915, having failed to weaken the lub oil market further. Buying interest fell off somewhat, however, and consumers were evidently inclined to defer buying further until they have a chance to survey the situation more thoroughly. Pennsylvania refiners are reported to be still overstocked on some grades, notwithstanding recent cuts in refinery output, and it is still a buyers' market in most respects.

Wax

The higher melting points have shown a little easiness during the week, but with this exception the market is without change. Spot 135-137 a.m.p. is available at 4⅝ cents per pound, down an eighth, with 133-135 a.m.p. showing a corresponding drop to 4⅛ cents per pound.

Domestic buyers have shown a little more interest in offerings this week, but inquiry continues almost entirely for prompt shipment wax. Export demand has also picked up a little, and it is reported that some fair-sized sales have been closed for shipment out of the Gulf.

The market for crude scale has been rather routine, with sellers quoting 122-124 a.m.p. at a range of 2⅛ to 2¼ cents per pound.

Diesel Oil

Contract movement has held up well during the week, with current deliveries going out on the basis of $2 per barrel, bulk, at refinery terminals, with the usual differential for lighterage alongside within the harbor limits. There is a fair spot inquiry reaching refiners from marine interests, in addition to the contract deliveries.

Diesel oil contracts for 1931 are being written by eastern refiners on a sliding scale basis, with $2.10 per barrel as the top, buyers to be billed on the basis of current quotation at time of delivery.

While refiners have been successful in holding the spot market at $2 per barrel, refinery, thus far in 1930, there is a feeling in some quarters that this price will be lowered before the end of the year. Nothing definite has developed in this connection as yet, however.

Gas Oil

Refiners are quoting 28 plus recycled gas oil at 5¼ cents per gallon, and, while some business is going through at this level, the market is being freely shaded by some interests, with as low as 4½ cents per gallon held in some quarters, although 4¾ cents seem to be bottom in most instances.

Consumption of gas oil is running into large totals, but the market is still oversupplied, and it is the liquidation of weak surplus holdings that is keeping the market in its present unsettled state.

Fuel Oil

Bunker "C" remains unchanged at $1.05 per barrel, bulk, f.o.b. refinery terminals, with a good movement reported. A little shading is being done on industrial sales in some instances, but principal factors in East Coast refinery circles are adhering to the posted price. Movement continues fair.

Business for 1931 is being taken on contract, with $1.35 specified as top for the coming year, and deliveries to be billed buyers on the basis of spot price on date of delivery. The fact that refiners have specified $1.35 as top, however, indicates that decidedly stronger views are held regarding the outlook for the fuel oil market during the coming year.

Gulf Export Market

The resumption of "open market" trading at the Gulf has been productive of numerous reports of low prices (many of which have proved to be unfounded), and with the market now showing a more stable tone, actual business is on the upgrade.

A cargo of 64-66 gasoline, totaling 7,500 tons, 10 per cent more or less, was booked for December shipment to France at 6½ cents per gallon, and this sale led to reports of numerous offerings at that level. It appeared on investigation, however, that the cargo involved was an isolated instance of a forced sale, and other holders were not inclined to offer under 6¾ cents a gallon, with 7 cents quoted firm in some quarters. Besides the full cargo put through at 6½ cents, three small cargoes of between 3,000 and 4,000 tons each were reported closed for shipment to France at 6¾ cents, December loading.

Navy appears to have steadied somewhat with principal sellers quoting 5¾ cents per gallon at the Gulf. On the other grades, 390 endpoint is quoted out at 6½ cents and 400 endpoint at 6¼ cents per gallon.

The withdrawal of the export association as price makers in the export market has again put the American industry on a competitive footing with Russian, Rumanian and other suppliers, and competition has quickened in world markets.

Movement of kerosene into export channels at the Gulf has continued of small amount, notwithstanding the easier market now in effect. Sellers quote prime white at 4½ cents per gallon, water white being held at 5½ cents per gallon, both in bulk, cargo lots.

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended November 8 totaled 1,828,000 bbls., a daily average of 261,143 bbls., compared with 1,744,000 bbls., a daily average of 249,142 bbls. for the previous week and a daily average of 261,000 bbls. for the four weeks ended November 8. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast ports—	
Baltimore	244,000
Boston	80,000
New York	951,000
Philadelphia	351,000
Others	122,000
Total	1,748,000
Daily average	249,714
At Gulf Coast ports—	
New Orleans and Baton Rouge	80,000
Total	80,000
Daily average	11,429
At all United States ports—	
Total	1,828,000
Daily average	261,143
Daily average four weeks	261,000

Distribution of total imports is as follows:

Crude	1,394,000
Gasoline	291,000
Fuel oil	143,000

The eastern oil trade has been greatly interested in the proposal put forward by Royal Dutch-Shell interests that that group curtail its imports of gasoline from South America by substantially 50 per cent, and divert this quantity of motor fuel into export markets. The shortage of motor fuel to fill the requirements of Shell Eastern Petroleum Products, Inc., would be made up largely by shipments of California Shell gasoline eastward, as well as the movement of gasoline from Shell refineries in the Gulf area to the Atlantic Seaboard, under the proposed plan.

While Shell's plan would have little effect upon the general domestic gasoline situation, inasmuch as the decrease in shipments to the United States would be compensated for by the heavier movement of Shell gasoline from the Dutch West Indies into export markets, it is felt that the proposed cut in gasoline shipments into eastern seaboard markets would have a beneficial effect upon gasoline markets in East Coast territory.

There has been a steady and substantial increase in imports of gasoline into East Coast markets during the past two years, and this competition, added to the already severe competition encountered from California and the Gulf, has been no small factor in creating present unfavorable conditions in the East Coast gasoline market. A material curtailment of imports, therefore, would probably go a long way toward restoring some degree of stability to the market in this territory, and relieve eastern refiners of the excessive

amount of competition which they have been forced to meet from California, the Gulf, South America, and to an extremely minor degree as yet, Russia.

Petroleum Exports

There was a slight gain in export movement of most refined products through the local port for the week ended November 8, and the outlook for an increased volume was regarded in more favorable light. The cancellation of all export schedules by the export association, generally regarded as signalizing that group's entire withdrawal from its price-making functions in the export market, has considerably stimulated buying interests, and, while the greatest quickening in activity is being witnessed at the Gulf, more export inquiry for gasoline and kerosene has developed locally, with the restoration of the open market.

The following table shows principal exports of refined petroleum products from New York for the past three weeks (all figures in gallons unless otherwise noted):

	Week ended		
	Nov. 8	Nov. 1	Oct. 25
Gasoline	200,000	125,000	120,000
Naphtha	430,000	360,000	85,000
Kerosene	460,000	7,000	8,000
Fuel oil	125,000	95,000	210,000
Lubricating oil	1,110,000	1,095,000	1,050,000
Petroleum, ref.	395,000	1,280,000	475,000
	Pounds		
Petrolatum			
Paraffin wax	2,220,000	3,780,000	2,620,000
Refined			205,000
Scale	760,000	245,000	1,150,000
Lubricating grease	850,000	560,000	910,000

Buying of the minor products, such as petrolatum, paraffin wax and greases, as well as lubricating oils, has failed to attain expected volume during the past few months, and traders here are still optimistic concerning an early revival in foreign demand for these products. The principal impediment in the way of the resumption of normal trading appears to be the uncertain price basis which has ruled for the past few months, and the continued uncertainty regarding the outlook for the balance of the year. The market tone is bearish and buyers' views are naturally shaping up along the same lines.

California Oil Receipts

Receipts of California crude and refined petroleum at Atlantic and Gulf Coast ports for the week ended November 8 totaled 717,000 bbls., a daily average of 102,429 bbls., compared with 126,000 bbls., a daily average of 18,000 bbls. for the previous week, and a daily average of 72,929 bbls. for the four weeks ended November 8. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast ports—	
Baltimore	100,000
Boston	129,000
New York	374,000
Philadelphia	114,000
Total	717,000
Daily average	102,429
At Gulf Coast ports—	
All ports	None
At Atlantic and Gulf Coast ports—	
Total	717,000
Daily average	102,429
Daily average four weeks	72,929

Distribution of total California oil receipts is as follows:

Gasoline	606,000
Gas oil	64,000
Fuel oil	44,000
Lubricants	3,000
Total	717,000

Shipments of California refined petroleum products eastward for the week (with identity of owner of tanker moving the oil where such owner of record is an oil company) were as follows:

To New York—72,000 bbls. of gasoline and 3,000 bbls. of lubricating oils on the Solana (Tide Water-Associated); 87,800 bbls. of gasoline on the Broad Arrow (Standard Oil Co. of New York); 97,100 bbls. of gasoline on the China Arrow (Standard Oil Co. of New York); 92,000 bbls. of gasoline on the India Arrow (Standard Oil Co. of New York); 77,500 bbls. of gasoline on the Paul Shoup (Tide Water-Associated Oil Co.).

To Baltimore-Norfolk—80,600 bbls. of gasoline on the Agwiworld.

To Norfolk—45,600 bbls. of gasoline on the Pueblo.

To Providence—71,900 bbls. of gasoline on the New Jersey (The Texas Company).

CHICAGO SPOT MARKET SHOWS MORE ACTION

(Continued from Page 118)

is suggested that the plan used by some of the cities to regulate the saloons might be used with service stations. Limit the number of stations to one for each so many autos. License the stations and sell the right to operate under strict regulations. If the plan worked with service stations as it did with saloons it might solve many problems. It will be argued that no State, city or even National Government has a right to limit the number of service stations. It possibly has as much right as it assumed to have when it closed every saloon in the country. Many acts are justified today under the rule of the "greatest good to the greatest number." A limit to the number of service stations would do some good to the public as well as to those who are interested in the industry.

EASTERN FIELDS

(Continued from Page 51)

feet. In the SW Section 5. Hopewell Township, the Hopewell Fuel & Gas Co. drilled No. 4 on the A. O. Michael farm to a depth of 3,224 feet and in the Clinton sand, which produced 25 bbls. the first day after shot. In an outside test, Fetty and Lauchery completed a test on the Clove Cowden farm in Monroe Township, in the Berea sand at 1,306 feet and there was no showing of oil or gas.

In the shallow drilling in Washington County, there were three completions. Near Warner, Lot 46, Salem Township, the Jones Drilling Co. completed a test well on William Kinsey farm in the Buell Run sand and a depth of 268 feet. It produced 40 bbls. natural the first day. Near Whipple, Lot 62, Salem Township, A. G. Wiper and others completed their No. 1 on the Clinton Schneider farm in the Buell Run sand at 310 feet and it was dry. The Thomas Oil Co. drilled a test on the J. W. Moore farm, also near Warner, Lot 41, Salem Township, in the Bull Run sand and a depth of 274 feet and it was dry.

WEST VIRGINIA

The demand for Pennsylvania grade crude oil continues poor, and stocks are beginning to accumulate. The price which was cut 15 cents per barrel on November 12 is at the lowest point since 1915. All of the above is reflected in the drilling for oil in West Virginia for, during the past week, there were no oil wells completed. It might also further be stated that in the operations of the larger companies in this State, there are exactly two wells drilling on proven oil lease. In scattered areas, individuals and smaller partnerships bring in an occasional oil producer in testing a new lease closely situated to the gas fields.

Gas Completions

In Boone County, G. L. Cabot completed his No. 7 on the E. M. Arbogast farm, Crook district, at a depth of 3,670 feet and it is a light gas well. In Sherman district, of the same county, the same operator completed his No. 44 on the Federal Coal Co. tract at a depth of 2,903 feet and it is a dry hole. In Cabell County, Wilson and Mowery completed a test on the F. L. Frazier farm, Barboursville district, at a depth of 3,305 feet and it is at present waiting on a shot, with no estimate made of its production.

In Clay County, G. L. Cabot completed a test on the Blue Creek Coal Land Co.'s tract in Union district in the Berea sand at a depth of 2,600 feet and it was dry. In Kanawha County, the Allegheny Gas Corp. drilled No. 6 on the Bradford, Jr. and Laidley property in Louden district to a depth of 1,182 feet and it is showing for a small gasser. In Marion County, the Owens Illinois Glass Co. completed a test on the W. D. Ice farm, Paw Paw district, to a depth of 3,032 feet and in the Fifth sand, and it is showing for about 100,000 feet a day.

In Cameron district, Marshall County, Fry and McCracken drilled their third well on the John McGinnis farm and completed it in the Salt sand at 1,597 feet and have a gas well. The Moore Tex Oil Co. completed a test on the Amy Tennant farm, Clay district, in the Bayard sand, 2,923 feet, and it is a fair gasser. In Monroe County, the United Fuel Gas Co. completed No. 4,209 in Wolf Creek district, and on the L. E. Holstein farm, to a depth of 1,687 feet and it is dry.

There were two completions in Wetzel County. The Pittsburgh & West Virginia Gas Co. completed No. 5,219, a test on the T. M. Haskins farm, to a depth of 3,233 feet and it was dry. This was an old well drilled deeper. In Church district, also, the Burton Development Co. drilled a test on the E. J. Hoge farm to a depth of 2,087 feet and it is reported as a gas well.

Drilling in West Virginia

On Big Run of Mill Creek, Ravenswood district, Jackson County, the Lone Pine Oil Co. has rigged up to drill a test on the Jeff Phillips farm. On Hughes River, Murphy district, Ritchie County, the West Virginia Utilities Co. has completed a rig for their No. 2 on the Moore McNeil farm.

In Smithfield district, Roane County, there are three tests drilling. The Central States Gas Co. has reached 850 feet in a test on the John Patton farm and at present the well is down waiting on water. On the Charles Nichols farm, the Union Gas Co. is drilling a test at 650 feet. The Van Oil & Gas Co. is down to 450 feet in a test on the C. E. Vandevender farm. In Curtis district, the Reedy Oil & Gas Co. has made locations for two tests, one on the G. A. Knopp farm, and the other on the A. J. Paugh farm. In Spencer district, the Mountain State Gas Co. is down to 1,640 feet in a test on the John T. Morford farm. In Reedy district, the test of the Heck Oil Co. on the H. B. Price farm is shut down at 895 feet, and the test of the Wiser Oil Co. on the Mary A. Vandale farm is shut down at 650 feet, both on account of lack of water.

Jackson County

In Washington district, Jackson County, the Pine Knot Oil Co. is now drilling its test on the J. T. Phillips farm. In Grant district, the test of J. H. Starr and others on the J. H. Starr farm has reached 2,330 feet with no report. Calhoun County continues active and some of the tests drilling follow: Godfrey L. Cabot is drilling on the George Hunt farm and is down to 1,885 feet. This is in Washington district, and in the same district and on the G. B. May farm, the same operator has a rig standing for a test. Doctor Hively and others have rigged up on the William Hall heirs farm in the same district. McCall and others are down to 1,450 feet on the D. E. Bailey farm, Washington district, and in the same section, the Southeastern Gas Co. has reached 1,250 feet on the Lubana J. Jarvis farm. In Center district, Creed Barker has a rig standing on the J. L. Stump farm, and B. J. Crawley has a rig up on the Florence Pell farm. In the same district, A. H. Jackson has a rig on the F. S. Means farm, and W. H. Bickel has a location ready on the John D. Collins farm. In Center district, the Hope Natural Gas Co. has made a location for for its No. 7,510, a test on the Emma Ryan farm, and F. F. McIntosh has rigged up on the Clinton Shock farm. In Lee district, McCall and others are testing the sand at 1,360 feet on the Frank Wallbrown farm. In the same district, the Rocksdale Oil & Gas Co. has reached 2,100 feet on the C. C. Starcher farm, and has rigged up on the Thomas Slider farm. K. C. Simmons is shut down on the Dorothy Brannon farm, Lee district, and is cementing the hole after reaching 2,045 feet. In Sherman district, C. B. Lewis and others have hauled in part of the material on the Calhoun Poor farm, and L. P. Bickel has rigged up on the Jack Bland farm. In the same district, the Mid-Penn Oil Co. has a rig ready on the Chess Poling farm.

In Gilmer County, which has suffered severely all summer from the lack of water, operations are progressing wherever possible. The West Virginia Utilities Co. has spudded in and started drilling a second test on the Waldo Bush heirs farm in Center district. In the same district, the Carnegie Natural Gas Co. is drilling at 1,200 feet on a second test on the E. B. Baker farm, and has made a location for No. 3 on the L. Wilmoth farm. In DeKalb district, Clem Morris and others have a rig up on the W. F. Roberts farm, and Frank Golden and others have a rig ready on the H. E. Engle heirs farm. In the same district, James A. Tierney is shut down at 1,450 feet for water on the F. G. Hardman farm, and F. G. Davis and others for the same reason at 550 feet on the Alva J. Hardman farm. The Philadelphia Natural Gas Co. has reached 1,900 feet in its No. 7,568, a test on the M. S. Linger farm, DeKalb district, and A. E. Ellis and others is down to 1,775 feet in No. 1 on the Bush heirs farm. In the same section, H. Roberts and others have rigged up for their No. 3 on the G. W. Miller farm.

SOUTHWEST PENNSYLVANIA

On account of the dry conditions in southwest Pennsylvania, there were no additional completions in Greene County. In Washington County there were two wells completed. In East Finley Township, the Manufacturers Light & Heat Co. completed No. 3,440 on the Robert Earley farm to a depth of 3,060 feet and it was dry in all formations. The Hopewell Oil & Gas Co. had a similar result in its second well on the J. Buchanan farm which reached the Fifth sand at 2,800 feet with no pay.

In Allegheny County, the Groveton Oil Co. drilled a test on the Young heirs farm, Kennedy Township, to a depth of 3,200 feet and it was dry in all sands.

CALIFORNIA FIELDS

(Continued from Page 56)

tropic area, the Shell's No. 1 Williams in Section 17-27-23 is coring ahead at 7,645 feet and a check of the log fails to show anything worth testing out up to the present time. The Associated is making good footage in No. 1 Mitchell, a test being drilled in the Jacalitos Hills, and the outcome will be watched with interest because this range of hills, west of Kettleman Hills, has possibilities. The Terra Bella district in Tulare County, where small production has been found in several wells right on top of the granite around the 1,000-foot level, is passing out of the picture as the limited amount of oil present practically precludes commercial production.

DRILLING IN GERMANY

Prospecting for oil will be started soon in Schleswig-Holstein, near Hamburg, according to advices received by the Department of Commerce. Some companies believe that much of the northern part of Germany is underlaid with an extensive oil field, Dr. John W. Frey, chief of the Petroleum Section of the Department, stated, but one large concern which took steps to exploit the north German prospects abandoned the effort.

Oil prospecting will soon commence in the villages adjoining Itzehoe, Schleswig-Holstein, not far from Hamburg, according to German information contained in a report from Consul E. Talbot Smith, Hamburg. The operating company has not been named, but its representatives have conferred with owners of the land involved and indemnities have been fixed for both communities and individual owners. Drilling is to be taken up at once.

AUSTRALIAN PRODUCERS UNITE

An oil producers' association has recently been formed in the State of Victoria, Australia, to promote co-operation in oil prospecting, insure effective expenditure of funds and otherwise to contribute to the efficiency of prospecting effort, according to a report received in the Department of Commerce from Assistant Trade Commissioner H. P. Van Blarcom, Sydney. The association has just issued its first number of the "Oil Bulletin," a publication devoted to association activities and the petroleum industry. Several companies are already drilling in sections of Victoria and elsewhere in the Commonwealth, but so far oil has been found only in very small quantities.

Manufacture of Natural Gasoline

No Need of Changes in Regulations Regarding Natural Gasoline Seen

After six weeks' offical use of the Reid vapor pressure method and vapor pressure regulations under the Bureau of Explosives, nothing requiring any great change in natural gasoline shipping instructions or plant operation has come to light. Apparently a much closer agreement is being realized between test results made by the shipper and those made by the customer and thus far adoption of the Reid vapor pressure method has worked to the advantage of both.

For 15 years the Bureau of Explosives has been active in regulating the shipping of natural gasoline and other petroleum products. It has made and extended rules for the location of loading racks, the manner of loading, the types of equipment for tank cars and other containers in which liquid petroleum is transported.

Various types of equipment are specified for the several materials transported. The only gauge, or criterion for determining the difference in character was vapor tension.

Method Served as Check

The method of taking vapor tension, known as the Bureau of Explosives' method, was developed by that bureau and served as an admirable check on the kind of material that was put into the tank cars and containers. This method gradually came into disfavor because of the difficulty, if not impossibility, of making check tests within reasonable limits. The bureau recognized this difficulty and it self sought to develop an improved method. With the old vapor tension method, petroleum products could be shipped as follows:

1. Inflammable liquids under 10 pounds vapor pressure could be shipped in standard, uninsulated Class 2 and 103 cars. This would take care of motor fuel and heavier products such as kerosene, gas oil, fuel oil, etc.

2. Inflammable liquids having vapor pressure of 20 pounds and under, could be shipped in Class 104 insulated cars from March 1 to October 30, provided the temperature of the bath used in the vapor tension test was maintained at 100° F. From November 1 to March 1, the same pressure was allowed, the vapor pressure test governing. Cooler weather was taken into consideration in as much as 90° F. was allowed on the bath.

Liquid Compressed Gases

3. Liquid compressed gases could be shipped in Class 104-A cars, provided the vapor pressure did not exceed 33 pounds at 70° F.

4. Liquid compressed gases having a vapor pressure of 130 pounds at 70° F. were required to be shipped in Class 105 cars.

5. Class 105 (Modified Equipment), was designed to take care of a material whose vapor pressure did not exceed three-quarters of the test pressure of the car. These cars are made to withstand various pressures and to take care of the several liquefied gases.

Dissatisfaction with the old bureau

(Continued on Page 130)

CARBON PLANT IS SHUT DOWN

The Godfrey L. Cabot, Inc., carbon plant near Seminole, Okla., the first plant of its kind in the State, is shut down because of overproduction but will resume operation when the market gets in better position, according to information from the company's offices in Boston, Mass. A carbon plant is under construction at Sayre, which will get its supply of natural gas from Beckham County fields.

AERONAUTICAL BODY ADOPTS RULES FOR HANDLING AVIATION GASOLINE

The growing use of natural gasoline in airplanes lends added interest to safety rules for handling aviation gasoline as adopted by the fuels and lubricants section of the Aeronautical Chamber of Commerce of America. The following precautions are among those embodied in the newly formulated safety rules:

Make certain that a fire hazard is never allowed near gasoline storage or filling operations. This means no smoking as well as no flames or open lights of any description. Men handling gasoline should carry only safety matches.

Storage tanks and tank trucks delivering gasoline should be checked for water every time a delivery to storage is made, or oftener if deliveries are infrequent. This applies to pumping, pneumatic and gravity systems. Obviously it does not hold where water flotation systems are installed.

Protect fill pipes to underground storage tanks by heavy guards in such a way as to prevent trucks from backing against them when making dump.

See that all fill caps are properly replaced to prevent entrance of water or dirt into tank.

Fueling of Airplanes

Gasoline should be dispensed inside of buildings.

It is recommended that the man handling the hose nozzle carry with him while fueling, preferably in a sling on his back, a 7½-pound carbon dioxide fire extinguisher. So equipped, he can put out at its inception, any fire which may start during that fueling operation. Or, some one should be standing close by with fire extinguisher readily available.

Be sure the airplane is independently grounded before a contact is made between plant and fill line. This means equalizing by metallic connection of tank supplying and tank supplied. Metal to metal contacts should be established between the airplane tank, the filling funnel and the hose nozzle before gas starts to flow.

Gasoline should be properly filtered when dispensed into airplane tanks. This should be done preferably by a very fine mesh metal filt ring device rather than by filters using chamois, felt, etc., which might cause a static electrical charge Metal screens should be inspected daily for holes or corrosion.

Hold nozzle of hose so that full stream does not impinge directly on chamois or screen, but against the side of the funnel. Not only will pressure force water through chamois but static will also be built up by the flow of gasoline through the hose.

Watch the gas on the filter, if unusual sediment or water is observed stop filling operations and locate the source.

When filling airplane tanks full where airplanes have suitable gauges it is well to have some one watch the gauges in the cockpit to prevent overflowing the tanks.

Get meter readings before and after each filling operation.

Fueling From Trucks

The fueling of airplanes direct from trucks should be discouraged. Although this method of fueling is convenient to both pilot and operator, it interjects hazards which outweigh its conveniences.

However, in cases where trucks are used the engine exhaust should be designated to discharge at the front of the truck and should be covered with a No. 40 mesh screen. During the fueling operation the truck's engine should never be kept running.

Ground chains should be kept in first class condition. Before fueling the end-spikes on these chains should be driven deep into the ground.

All fueling trucks should carry pressure type fire extinguishers.

If pump system is used, check underground tank each day for water. This may be done by using water testing paper or paint soluble in water. If any water is indicated pump it out through the fill pipe with a hand pump with suction pipe long enough to reach the bottom of the tank. This is not necessary where water flotation system is used.

Emphasis should be put upon proper care of the hose in the pit. Hose should be capped and pit kept free from water.

Hose should be of the metal lined type or of the type embodying wire wound within the fabric of the hose. It should be rubber covered and thoroughly bonded to the coupling connection at each end.

In taking hose from pit handle it as carefully as possible. Do not drag it any more than necessary or permit short kinks or loops to form in it. Use the minimum length of hose that will meet your conditions. If men are available, carry the hose instead of dragging it.

Be sure grounding clips are on hose and, before filling starts, that clips are properly connected to funnel.

Where gasoline systems have sediment traps see that those traps are flushed frequently.

Handling Gasoline in Drums

Drum delivery of gasoline is obsolete on modern airports. However, occasions often arise where drum quantities are necessary for emergency or temporary use. The following safety precautions are accordingly included:

See that drums are handled gently. Never drop drums to the ground even when ground is soft, since the strain of the fall may loosen scale or galvanizing. Do not roll drums down skids, but turn around and slide down. They should not be permitted to strike each other with any force.

Full drums should be stored with plugs up and under cover. Direct rays of the sun cause some evaporation losses. If necessary to store drums in the open, store on end as follows: Block up one side of the drum about 4 inches so that only small amount of water can stand on the head of the drum. Block should be so placed that low place where water will collect is just halfway between the large and small plug. In this way no water can stand around the plugs to find its way in through a leaky thread, neither is there danger of loss of gasoline which often results when drums are stored on their sides.

It is desirable not to pump gasoline from drums with hand pumps unless enough of such equipment is brass, so that no steel on steel blows with chance of spark as possible. Therefore, it is recommended that to empty drums into underground tanks make a platform and skid, platform to be high enough to be above funnel in fill pipe. Make up a fitting of a bushing, nipple, valve and nipple (valve and nipples to be about 1-inch) to screw into large plug of drum. Provide static bonding wires and clips on fitting. With drum upright remove large plug and screw into fitting with valve closed. Roll drum up skid, spot over funnel and connect bonding slips to funnel, remove small vent plug and discharge gasoline into funnel by opening valve. Dump the drum out completely, by raising the back end of drum. Gas and drums should be clean enough to permit reasonable filtering of every drop. No gasoline should be thrown away or left in drums.

Gasoline in cases must be stored inside. Prolonged exposures to rain or sea water will result in corroded and leaking tins. Loss of gasoline from this cause may be serious.

Fueling planes from drums with hand pump or air pressure must be considered as a temporary expedient until safer equipment is available. Particular caution must be taken in handling steel and iron pumps around open steel drums that no blows of steel on steel of sufficient violence to cause a spark can occur. The use of a bronze bushing to screw into opening for large plug to hold pump in place is recommended instead of present cast iron bushings. The use of large monkey or stillson wrenches to steady the pump is to be discouraged since slippage of the wrench may cause a violent blow with resultant spark.

In pumping from new drums it should be practical to put all the gas the pump will reach in the ship. From old drums it may save time not to pump up the last couple of gallons as that will contain the most of the sediment. In any case, immediately after the ship leaves, collect and filter into a clean container all gasoline left in drums. This filtered gas should be suitable for fueling ships.

FAILURES OF GAS LINE HEAD ACCIDENT CAUSES

Sixty-three fatalities were reported among the 196,796 petroleum workers competing in the 1930 Petroleum Section safety contest sponsored by the American Petroleum Institute. Fire and explosion head the list of causes. Among the 23 fatal accidents in this group gas line failures stand first, emphasizing the importance of precautionary measures on the part of the natural gasoline industry, which especially faces this hazard. Other deaths reported under the head of fire and explosion include those resulting from ruptured lines and from hot oil sprayed on clothes and flashing.

Two deaths resulted from asphyxiation, in one case caused by benzol fumes in a pump house and in the other by fumes in a manhole. Electric shock caused two deaths. In one instance a steel gauge tape come in contact with a switch and in the other the victim received 19,000 volts in throwing a switch. Traffic accidents caused two deaths.

Sixteen deaths from other causes are attributed to the following accidents: Steel rotary hose fell, crane shear, structural steel work, pipe fell in derrick, gin pole fell (guy wire broken by truck), fell on tool wrench, driller tangled with bull-wheels, strain and weak heart, filter plates fell on legs, knocked from tank by swing line, pulling pin on locomotive crane, tipping pump off truck, casing elevators fell, fell off truck, struck by compressor fly wheel, caught in unprotected pump gears.

WEST COAST MEN HOLD OPENING FALL MEETING

LOS ANGELES, Calif., Nov. 17.—Over 400 men connected in various capacities with the natural gasoline industry on the West Coast attended the fall meeting and annual banquet of the California Natural Gasoline Association here Thursday, November 13, marking the beginning of the fall meetings. The association, organized several years ago, meets monthly with programs largely devoted to the discussion of technical problems incidental to the construction and operation of natural gasoline plants.

R. W. Garman, general superintendent of the natural gasoline department of the Union Oil Co. and president of the association, presided over the entertainment program which followed the dinner in the Biltmore Hotel.

Brief Items for Petroleum Refiners

GULF REFINING TO PUSH STATEN ISLAND PROJECT

NEW YORK, Nov. 17.—The Gulf Refining Co. plans no retrenchment in the work on its plant under construction in Gulfport, Staten Island, according to W. L. Mellon, chairman of the board. A committee of Staten Island labor leaders, upon circulation of a story that 2,500 mechanics employed on the project were to be discharged, went to Washington, D. C., to seek the aid of Col. Arthur Woods, chairman of President Hoover's emergency employment committee, and of Secretary of the Treasury Andrew W. Mellon to forestall this rumored action.

In a letter, written from the company's headquarters in Pittsburgh, Pa., the chairman of the board said there had been no intention of discharging the employes. "As a matter of fact," he wrote, "construction work at Gulfport at present is at its peak and the program, as originally outlined, will be carried to completion this year. More money will be expended on the improvements than was at first contemplated.

"It is unfortunate that the Gulf Refining Co. should be charged with retrenching and assuming a policy of extraordinary economy at a time like this when employment is so badly needed. The company undertook an ambitious program of extension and improvement and it has not deviated from its original purpose to complete all the work contemplated.

"The Gulf Refining Co. has been and is doing everything in its power, consistent with sound business, to improve the unemployment situation."

AUSTRALIAN COMPANIES INCREASE THEIR PRICES

All the oil distributing companies in Australia have announced increases in prices of kerosene and lubricating oils to cover the new primage duty and sales tax. The new prices of kerosene range from 1 shilling 2⅞ pence an imperial gallon to 12 shillings 6 pence a case, with discounts for cash payment. Wholesale prices for lighting kerosene are from 1 shilling 1½ pence a gallon for bulk kerosene to 13 shillings 6 pence a case, with discounts.

Motor oils have been increased 3 pence a gallon and other lubricating oils have increased slightly, depending on demand. Turpentine substitute has also been increased in most cases. The increases in kerosene prices were general, but on lubricants it is understood that some of the independent dealers have retained old prices, or even reduced them. So far retail prices have shown no change.

CANADIAN CONSUMPTION RISES

Gasoline consumption on the Canadian prairies shows a large increase during the first nine months of 1930 over the corresponding period last year. To September 30 Alberta used 37,000,000 gallons as compared with 34,600,000 gallons in the corresponding period last year. In Saskatchewan and Manitoba consumption was approximately 20 per cent heavier than in Alberta and the increase over 1929 consumption was proportional. The increase is attributed to the growing use of machinery in agrarian, lumber and other industrial enterprises.

REFINERY EXTENSION PLANNED

CHATHAM, Ontario, Nov. 17.—The Canadian Oil Companies, Ltd., has announced plans for enlargement of its refinery and storage plant in Petrolia, Ontario, at an estimated cost of $250,000.

OIL AND ELECTRICITY COMBINATION GROWING

Use of oil as fuel, in combination with electricity, gradually is increasing on the railroads of the United States. One railroad company already has 800 horsepower oil-electric locomotives, which it is said operate with 30 to 60 per cent greater economy than steam locomotives of the same power. They are capable of handling three to five standard steel coaches in local main line service at speeds up to 65 miles per hour, and in freight service haul up to 750 gross tons or 18 loaded freight cars. Used on a line between MacFarland and Goodland, Kans., an oil-electric locomotive has been making a 345-mile run daily.

Gasoline and electric engines are hauling passenger trains even in the coal regions of Pennsylvania. Some of the roads are experimenting with large oil-electric engines for use in the mountain regions. What is believed to be the first gas-rail car train ever operated between the Atlantic and Pacific oceans has been put into commission in Central America as a boat train between Puerto Barrios and San Salvador.

Railroad men say the new equipment has smaller fuel consumption, lower maintenance cost and greater availability for operation.

NEW ZEALAND REDUCES PRICES

The wholesale price of gasoline has been reduced by 1 penny a gallon throughout New Zealand. This means that only 1 penny of the 2 pence increase in the gasoline tax will be passed on to the public. Petroleum production in New Zealand is small and the flow intermittent. Total production to date is probably not over 50,000 bbls. Imports of crude, fuel and gas oil have varied from 632,000 bbls. in 1925 to 810,000 bbls. in 1929. Exports and bunkers were 291,000 bbls. in 1925 and 475,000 bbls. in 1929. Wellington is the chief port of entry for petroleum products.

CASPER REFINERY LEADS IN NO-ACCIDENT EFFORT

The Casper, Wyo., refinery of the Standard Oil Co. of Indiana now heads the list of best known records for hours worked in the petroleum industry without a lost time accident. This record surpasses the former record of the Wood River refinery of the same company. An electrician disobeyed instructions and tried to use a pipe line for a walkway. He fell and fractured two ribs. According to Safety Director B. V. Osborn, the Casper refinery is starting all over to make a new record.

"Shell Safety News," says the Comar Oil Co. in Tonkawa, Okla., worked from November 24, 1928, until August 26, 1930, without a lost time accident. On that date a derrickman fell from the tubing board, suffering injuries that caused lost time. Superintendent C. M. Copland says, "It will take a long time to build up another record equal to the one just broken, but we are starting on it today."

Records of operation without lost-time accidents in the oil industry are reported by the American Petroleum Institute as follows: Manufacturing, Casper, Wyo., refinery, Standard Oil Co. of Indiana, 2,102,503 man hours; producing, Tonkawa division, Comar Oil Co. (Shell Petroleum Corp.), 1,413,229 man hours; marketing, Minneapolis division, Standard Oil Co. of Indiana, 1,987,200 man hours; natural gasoline, Salt Creek division, Midwest Refining Co., 645,712 man hours; pipe line, San Joaquin division, Standard Oil Co. of California, 1,334,800 man hours; and marine, Associated Oil Co., 144,816 man hours.

PLANS TO BOOST IMPORT DUTY

Reports from Tallinn state that the Estonian government plans to increase the import duties on gasoline and some other mineral oils in the near future as a measure of protection to domestic plants producing these commodities from oil shale.

USE OF THE TRIMMINGS SOLVES WASTE PROBLEM

Oil refiners, says the Lamp, published by the Standard Oil Co. (New Jersey), once experienced the same trouble dressmakers have in cutting an intricate pattern out of a piece of material. First kerosene, then gasoline became the chief product of the industry, but in refining them out of a barrel of crude oil so many scraps and trimmings were left over that their disposal became a problem.

Today natural gas, for example, is burned as a fuel in thousands of homes and factories, and finds other markets in metal-cutting torches and in the manufacture of various alcohols. It was once blown into the air. Asphalt, another former waste product, now paves and oils roads and enters into briquettes, roofing material, shingles, automobile tires, linoleum substitutes, waterproofing material and paint compounds. Automobile lacquer is manufactured with an alcohol solvent derived from petroleum.

The feminine dressing table, too, is fairly crowded with things containing petroleum by-products. Cold cream, cosmetics, perfumes—and in the medicine chest, salves, ointment, medical oils, liniment and rubbing alcohols are on the list. In the kitchen, insecticide, wax paper, flavoring extract and preserving wax draw on the oil refinery for all or part of their constituents.

HYDROGENATION NOW UTILIZED IN FIVE WAYS

Recent announcements by the Standard Oil Co. (New Jersey), whose new hydrogenation plant at Bayway, N. J., is now in full operation, reveal that the process now has five different uses.

The fact that by the addition of hydrogen crude oil, refinery residues or even coal could be converted into gasoline has been in the headlines, but the manufacture of premium quality lubricants out of low grade lubricating distillates, for example, was a function of hydrogenation not generally known. Nor was the production of highly antiknock gasolines from gas oils. Other uses include the making of premium grade kerosene and other burning oils, and the elimination of gum and sulphur from naphthas. Complicated treating processes have been necessary heretofore to work these objectionable substances out of gasoline before putting the fuel on the market.

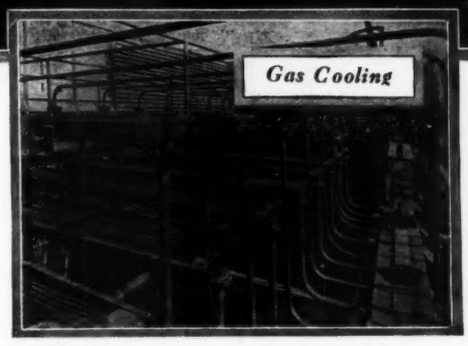
Hydrogenation is far from perfected yet, of course, and the Standard plant is the only one in operation in this country so far. But as more units are constructed the motorist can look for an even further improvement in his gasoline and lubricants, as well as in other products. For even the comparatively small quantities of hydrogenated products now produced at Bayway are of such quality that blending them with other stocks is resulting in raising the quality of the entire supply from that refinery.

WAVERLY PROMOTES BOYD

For leading the Wichita district of the Waverly Oil Works Co. to first place in the company's sales campaign this year, E. R. L. Boyd, district manager for an area embracing Kansas, Oklahoma and Texas, has been promoted to division sales manager over the Wichita, Kansas City and Omaha districts. Mr. Boyd has been with the Waverly company for 12 years, having started as a salesman in Dodge City, Kans. As divisional sales manager Mr. Boyd will supervise sales in a territory lying between the Rocky Mountains and the Mississippi River from the Canadian line to the Gulf Coast.

STANDARD OF INDIANA SELLING AND SERVICING TIRES

The Standard Oil Co. of Indiana started the actual selling and servicing of tires on November 1. One of the first customers at a downtown station in Chicago was Cyrena Van Gordon, Chicago Civic Opera star. While an attendant changed a tire on her car she utilized another new facility at the Standard service stations by writing out a telegram and giving it to a second attendant.



.... all with the same G-R Bentube Sections—

An example of Bentube Section adaptability and high salvage value

The G-R Bentube Section is patented and it is our intention to prosecute all infringements. Suits, charging infringement of our patent No. 1,617,083, have been brought in the U. S. District Courts at Wilmington, Delaware, and New York, New York.

THE wide range of usefulness of G-R Bentube Sections is one of the important advantages of these unique scale-shedding atmospheric coolers. Moreover, their sturdy, durable construction, interchangeability, and high salvage value permit taking full advantage of their adaptability through an indefinite number of changes in plant operations.

A large Mid-Continent refinery, for example, purchased a number of G-R Bentube Sections. Some were used for transfer of heat between rich and lean mineral seal oil and others for gasoline condensing. Changes in plant operation subsequently caused dismantling the portion of the plant in which the sections were being used. They were readily dismantled and removed to another location, there reassembled, and are now being used for gas cooling.

HEAT EXCHANGERS
CONDENSERS
Sub-cooling—Partial—Reflux
COOLERS
Liquid—Gas—Jacket Water
OIL HEATERS
LEVEL CONTROLLERS

THE GRISCOM-RUSSELL COMPANY
285 Madison Avenue, New York
Branch Offices in 27 Cities

Griscom-Russell

Heat Transfer Apparatus

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

	Nov. 18		Nov. 11		Nov. 4	
OKLAHOMA (Group 3)—						
50-52 450 endpoint	.04¾	.05	.05	.05¼	.05	.05¼
56-58 450 endpoint	.04¾	.04¾	.04¾	.05	.04¾	.05
*58-60 437 endpoint (U. S. Motor)	.0515		.0530		.0563	
*60-62 437 endpoint	†.05¼		†.05¼	.05½	†.05¼	.05½
*60-62 400 endpoint	.0525		.06		.0625	
*64-66 375 endpoint	†.05½	.06	.0675		†.06	
68-70 360 endpoint	.05¾		.05¾	.06	.05¾	.06
64-66 437 endpoint (blend)	.04¾	.05¼	.05	.05¼	.05	.05¼
NORTH TEXAS—						
50-52 450 endpoint	.04¾	.05	.05	.05¼	.05	.05¼
58-60 450 endpoint	.04¾	.05	.04¾	.05	.04¾	.05
58-60 437 endpoint (U. S. Motor)	.04¾	.05¼	.04¾	.05¼	.04¾	.05¼
60-62 400 endpoint	.05¼		.05¼	.05½	.05¼	.05½
64-66 390 endpoint	.05¼	.05½	.05¾	.05¾	.05¾	.05¾
64-66 375 endpoint	.05½	.05¾	.05½	.05¾	.05½	.05¾
68-70 360 endpoint	.06		.06		.06	
64-66 437 endpoint (blend)	.04¾	.05¼	.05	.05¼	.05	.05¼
***NORTH LOUISIANA—**						
58-60 437 endpoint (U. S. Motor)	.06¼	.06½	.06¼	.06½	.06¼	.06½
***ARKANSAS—**						
58-60 437 endpoint (U. S. Motor)	.06¼	.06½	.06¼	.06½	.06¼	.06½
PENNSYLVANIA—						
52-54 Naphtha	.06¾		.06¾		.06¾	
54-56 Naphtha	.06¾		.06¾		.06¾	
58-60 Gasoline	.06¾		.06¾		.06¾	
60 Gasoline	.06¾	.07	.06¾	.07	.06¾	.07
62 Gasoline	.07		.07		.07	
64 Gasoline	.07½		.07½		.07½	
68-70 350 endpoint gasoline	.08½		.08½		.08½	
CALIFORNIA—						
†58-60 437 endpoint (U. S. Motor) domestic	.08	.11	.08	.11	.08	.11
†60-62 400 endpoint domestic gasoline	.09½	.11½	.09½	.11½	.09½	.11½
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.04½	.04¾	.04¾		.05	
56-58 450 endpoint	.04½	.04¾	.04⅝	.05	.04¾	.05
58-60 437 endpoint (U. S. Motor)	.04½	.05	.04¾	.05¼	.04¾	.05¼
60-62 400 endpoint	.04¾	.05½	.05	.05½	.05	.05¼
64-66 375 endpoint	.05¼	.05¾	.05½	.06	.05¾	.06
64-66 437 endpoint (blend)	.04⅝	.05	.04¾	.05¼	.04¾	.05¼
68-70 360 endpoint	.06	.06¼	.06	.06¼	.06¼	.06½
GULF COAST (Export)—						
58-60 U. S. Motor	.05¾	.06¼	.06	.06½	.07	
60-62 400 endpoint	.06¼	.07	.06¼	.07	.07½	
61-63 390 endpoint	.06½	.07¼	.06½	.07¼	.07¾	
64-66 375 endpoint	.06¾	.07⅜	.06⅞	.07½	.08	

*Weighted average prices November 17, 10 and 3 as reported by representative refiners. Sales to jobbers only. †No sales reported. Prices show general market.

*Louisiana, Arkansas, Mississippi and East Texas delivery. †For local consumption.

NATURAL GASOLINE

	Nov. 18		Nov. 11		Nov. 4	
OKLAHOMA (Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04⅝	.04¾	.04½	.04¾	.04½	.04⅝
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04½		.04½		.04½	
Grade B, 76-83.9, 375 e.p., rec. 85%	.04½		.04½		.04½	
Grade BB, 84-92, 375 e.p., rec. 85%	.04⅜	.04½	.04½		.04½	
Grade C, 80-92, 375 e.p., rec. 78%	.04⅜		.04½		.04½	
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04⅝	.04¾	.04½		.04½	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04½		.04½		.04½	
Grade B, 76-83.9, 375 e.p., rec. 85%	.04½		.04½		.04½	
Grade BB, 84-92, 375 e.p., rec. 85%	.04⅜		.04½		.04½	
Grade C, 80-92, 375 e.p., rec. 78%	.04⅜		.04½		.04½	
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.04¾		.04½	.04¾	.04½	.04¾
Grade BB, 84-92, 375 e.p., rec. 85%	.04½		.04½		.04½	
Grade C, 80-92, 375 e.p., rec. 78%	.04½		.04½		.04½	
CALIFORNIA—						
75-78, 375-390 endpoint	.07	.08	.07	.09	.07	.09
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04⅝	.04¾	.04½		.04½	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04½		.04½		.04½	
Grade BB, 84-92, 375 e.p., rec. 85%	.04⅝		.04½		.04½	

BURNING OIL

	Nov. 18		Nov. 11		Nov. 4	
OKLAHOMA (Group 3)—						
41-43 water white kerosene	.03⅛	.03¾	.03⅛	.03¾	.03⅛	.03¾
42-44 water white kerosene	.03¼	.03¾	.03¼	.03¾	.03¼	.03¾
NORTH TEXAS—						
41-43 water white kerosene	.03	.03¼	.03	.03¼	.03	.03¼
40-41 water white kerosene	.02⅞	.03	.02⅞	.03	.02⅞	.03
***NORTH LOUISIANA—**						
41-43 water white kerosene	.04¼		.04	.04¼	.04	.04¼
***ARKANSAS—**						
41-43 water white kerosene	.04¼		.04	.04¼	.04	.04¼
PENNSYLVANIA—						
43 Kerosene prime white	.04¾		.04¾		.04¾	
45 Kerosene water white	.04⅞	.05⅛	.04¾	.05⅛	.04⅞	.05⅛
46 Kerosene water white	.05¼	.05½	.05	.05¼	.05	.05¼
CALIFORNIA—						
38-40 water white Kero. (high burning test)	.05	.06	.05	.06	.05	.06
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white kerosene	.03	.03¼	.03	.03¼	.03	.03¼
42-44 water white kerosene	.03¼	.03½	.03¼	.03½	.03¼	.03½
GULF COAST (Export)—						
41-43 prime white	.04½	.04¾	.04½	.04¾	.05	
41-43 water white	.05½	.05¾	.05½	.05¾	.06	

*Louisiana, Arkansas, Mississippi and East Texas delivery.

FUEL OIL

	Nov. 18		Nov. 11		Nov. 4	
OKLAHOMA (Group 3)—						
Below 18 gravity Fuel Oil, per bbl.	.40	.45	.45	.50	.45	.50
18-22 Fuel Oil, per bbl.	.50	.55	.50	.55	.52½	.57½
20-22 Fuel Oil, per bbl.	.55	.60	.55	.60	.55	.60
22-26 Fuel Oil, per bbl.	.60	.65	.60	.65	.60	.65
24-26 Fuel Oil, per bbl.	.65	.70	.65	.70	.65	.70
26-30 Fuel Oil, per bbl.	.70	.75	.70	.75	.70	.75
28-30 Fuel Oil, per bbl.	.80	.90	.80	.90	.80	.90
32-36 Gas Oil (industrial)	.02⅛	.02¼	.02⅛	.02¼	.02⅛	.02¼
32-36 Gas Oil (straw color, high cold test)	.02¼	.02½	.02¼	.02½	.02¼	.02½
32-36 Gas Oil (straw color, low cold test)	.02⅝	.02⅞	.02⅝	.02⅞	.02⅝	.02⅞
36-38 Distillate	.02¾	.02⅞	.02¾	.02⅞	.02¾	.02⅞
38-40 Straw Distillate	.02¾	.03¼	.02¾	.03¼	.02¾	.03¼
NORTH TEXAS—						
Below 20 gravity Fuel Oil, per bbl.	.40	.50	.40	.50	.40	.50
24-26 Fuel Oil, per bbl.	.55	.65	.55	.65	.55	.65
32-36 Gas Oil (industrial)	.02	.02¼	.02	.02¼	.02	.02¼
38-40 Straw Distillate	.02¾	.03	.02¾	.03	.02¾	.03
***NORTH LOUISIANA—**						
18-20 Fuel Oil, per bbl.	.80	.85	.75	.85	.75	.85
30-32 Gas Oil	.03	.03¼	.03	.03¼	.03	.03¼
***ARKANSAS—**						
33-36 Distillate	.02¾	.03	.02¾	.03	.02¾	.03
30-32 Gas Oil	.02¾	.02⅞	.02¾	.02⅞	.02¾	.02⅞
16-22 Refinery Fuel Oil, per bbl.	.65	.70	.65	.70	.65	.70
GULF COAST (South Texas)—						
Gas Oil	.03¾		.03¾		.03¾	
Bunker C Fuel (cargo lots), per bbl.	.65	.67½	.65	.67½	.62½	.67½
Bunker C Fuel (small lots)	.90		1.00		1.00	
PENNSYLVANIA—						
30-34 Fuel Oil	.03¾		.03¾		.03¾	
36-40 Fuel Oil	.03¾		.03¼		.03⅞	
CALIFORNIA—						
33-36 Distillate	.02	.02½	.02	.02½	.02	.02½
26-32 Distillate	.01¾	.02	.01¾	.02	.01¾	.02
15-20 Fuel Oil, Bunker (at tidewater)	.60	.95	.60	.95	.60	.95
15-20 Fuel Oil (cargo lots), per bbl.	.55	.85	.55	.85	.55	.85
27 plus Diesel, per bbl.	.85	1.05	.85	1.00	.85	1.00
CHICAGO DISTRICT (Based on Group 3)—						
18-22 Fuel Oil, per bbl.	.57½	.65	.57½	.65	.57½	.65
22-26 Fuel Oil, per bbl.	.62½	.67½	.65	.70	.65	.70
28-30 Fuel Oil, per bbl. (zero)	.90	.95	.90	.95	.90	.95
32-36 Gas Oil (zero)	.02½	.02⅞	.02½	.02⅞	.02½	.02⅞
32-36 Gas Oil (industrial)	.02¼	.02⅜	.02⅛	.02¼	.02¼	.02⅜
38-40 Straw Distillate	.02¾	.03	.02¾	.03	.02¾	.03

*Louisiana, Arkansas, Mississippi and East Texas delivery.

LUBRICATING OIL AND WAX

	Nov. 18		Nov. 11		Nov. 4	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.05	.05½	.06	.06¼	.06	.06¼
100 vis., 3 color, 20-25 cold test	.04¾	.05	.05¾	.06	.05¾	.06
150 vis., 3 color, 20-25 cold test	.07		.07		.07	
150 vis., 4 color, 20-25 cold test	.06½		.06½		.06½	
180 vis., 3 color, 23-28 cold test	.08½		.08½		.08½	
180 vis., 4 color, 23-28 cold test	.08		.08		.08	
180 vis., 5 color, 23-28 cold test	.07¼	.07½	.07¼	.07½	.07¼	.07½
200 vis., 3 color, 23-28 cold test	.09¾	.10	.09¾	.10	.09¾	.10
200 vis., 4 color, 23-28 cold test	.09½		.09½		.09½	
200 vis., 5 color, 23-28 cold test	.09		.09		.09	
240 vis., 3 color, 25-30 cold test	.13¼	.13½	.13¼	.13½	.13¼	.13½
240 vis., 4 color, 25-30 cold test	.12¼	.12½	.12¼	.12½	.12¼	.12½
240 vis., 5 color, 25-30 cold test	.11¼	.11½	.11¼	.11½	.11¼	.11½
280 vis., 3 color, 25-30 cold test	.15½		.15½		.15½	
280 vis., 4 color, 25-30 cold test	.14½		.14½		.14½	
280 vis., 5 color, 25-30 cold test	.13½		.13½		.13½	
Cylinder Stocks:						
600 steam refined, light green	.07	.08	.07	.08	.07	.08
600, steam refined, dark green	.04½	.05½	.04½	.05½	.04½	.05½
190-200 vis., D color, Bright Stocks	.25		.26		.28	
150-160 vis., D color, Bright Stocks 0-10 C.T.	.20	.21	.21	.22	.21	.22
150-160 vis., D color, Bright Stocks 10-25 C.T.	.19	.20	.20	.21		
150-160 vis., D color, Bright Stocks 25-40 C.T.	.18½	.19½	.19½	.20½		
150-160 vis., E color, Bright Stocks	.18	.19	.19	.20	.19	.20
Waxes:						
124-126 White Crude Scale Wax	.02	.02⅛	.02	.02⅛	.02	.02⅛

All bright stock prices are for domestic movement.

PENNSYLVANIA—						
34 Neutral	.05½	.06½	.05½	.06½	.05½	.06½
34 Sundebloom	.05½		.05½		.05½	
36 Miners' Neutral	.05¾		.05¾		.05¾	
150, 3 color	.10¾	.12¼	.11	.12½	.11	.12½
180, 3 color	.15	.16	.15½	.16½	.15½	.16½
200, 3 color	.17	.17½	.17	.17½	.17	.17½
220, 3 color	.21	.22	.21	.22	.21	.22
600, steam refined	.09½	.10½	.09¾	.10¾	.10½	.11½
†635, steam refined	.15	.16	.15½	.16½	.15½	.16½
†650, steam refined	.16	.17	.16	.17	.17	.18
600, Pennsylvania Flash	.15½	.16½	.16	.17	.16	.17
630, Pennsylvania Flash	.23½	.24½	.24	.25	.24	.25
600, E filtered	.15	.17	.15	.17	.15	.17
600, D filtered	.19	.22	.18	.21	.19	.21
Pennsylvania Bright Stocks below 35 C.T.	.21		.21	.22	.22	.23
Pennsylvania Bright Stocks above 35 C.T.	.19	.20				
*122-124 White Crude Scale Wax	.02¼		.02¼		.02¼	
124-126 White Crude Scale Wax	.02¼		.02¼		.02¼	

*At New York. †Prices corrected for November 4 and 11.

GULF COAST (South Texas)—						
100 vis., 2-2½ color, pale oil	.06¼	.06½	.06¼	.06½	.06¼	.06½
200 vis., 3 color, pale oil	.08½	.09	.08½	.09	.08½	.09
300 vis., 3 color, pale oil	.09¾	.10	.09¾	.10	.09¾	.10
500 vis., 3½ color, pale oil	.11	.11¼	.11	.11¼	.11	.11¼
750 vis., 3½ color, pale oil	.12½	.12¾	.12½	.12¾	.12½	.12¾
1,200 vis., 3½ color, pale oil	.15	.15¼	.15	.15¼	.15	.15¼
2,000 vis., 4 color, pale oil	.16	.16½	.16	.16½	.16	.16½
200 vis., 5-6 color, red oil	.07¾	.08	.07¾	.08	.07¾	.08
300 vis., 5-6 color, red oil	.09	.09¼	.09	.09¼	.09	.09¼
500 vis., 5-6 color, red oil	.10¼	.10½	.10¼	.10½	.10¼	.10½
750 vis., 5-6 color, red oil	.11¾	.12	.11¾	.12	.11¾	.12

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

1,200 vis., 5-6 color, red oil	.14	.14½	.14	.14½	.14	.14½
2,000 vis., 6 plus color, red oil	.16	.16¼	.16	.16¼	.16	.16¼
CALIFORNIA—						
130 vis., 2½-3 color	.09	.09½	.09	.09½	.09	.09½
200 vis., 2½-3 color	.10	.10¾	.10	.10¾	.10	.10¾
300 vis., 3-3½ color	.10¾	.11½	.10¾	.11½	.10¾	.11½
350 vis., 3½-4 color	.11½	.11¾	.11½	.11¾	.11½	.11¾
400 vis., 3½-4 color	.12¼	.12¾	.12¼	.12¾	.12¼	.12¾
Red Neutral:						
200 vis., 4½-5 color	.10	.10¾	.10	.10¾	.10	.10¾
300 vis., 5-6 color	.10¾	.11¼	.10¾	.11¼	.10¾	.11¼
400 vis., 5-6 color	.12	.12½	.12	.12½	.12	.12½
500 vis., 4½-5 color	.13	.13½	.13	.13½	.13	.13½
500 vis., 5-6½ color	.13	.13¾	.13	.13¾	.13	.13¾
600 vis., 6½ plus color	.13½	.14½	.13½	.14½	.13½	.14½

Note—Bright stocks are not manufactured commercially on the Pacific Coast

NEW YORK (BAYONNE) REFINERY PRICES

	Nov. 18		Nov. 11		Nov. 4	
Gasoline, U. S. Motor, 58-60, 437 e.p.	.06¾	.07	.06¾	.07	.07½	.08¼
Kerosene, water white, 41-43	.06¼	.06¾	.06¾		.06¾	
*Fuel Oil, Bunker "C," 41-43	1.05		1.05		1.05	
†Fuel Oil Diesel, 28-30, per bbl.	2.00		2.00		2.00	
Gas Oil, 28 gravity plus	.04¾	.05¼	.04¾	.05¼	.04¾	.05¼
25 pale Paraffin Oil, tank car	.10¼		.10¼		.10¼	
28 pale Paraffin Oil, tank car	.07¼		.07¼		.07¼	
280 red Paraffin Oil, tank car	.12½		.12½		.12½	
250 red Paraffin Oil, tank car	.11½		.11½		.11½	
225 red Paraffin Oil, tank car	.10		.10		.10	
200 red Paraffin Oil, tank car	.09¼		.09¼		.09¼	
Domestic heating oil, min. 32 grav., tank car	.04½		.04½		.04½	
Refined Wax:						
120-122 a.m.p., per lb.	.02⅞		.02⅞		.02⅞	
125-127 a.m.p., per lb.	.03⅛		.03⅛		.03⅛	
130-132 a.m.p., per lb.	.03½		.03½		.03½	
133-135 a.m.p., per lb.	.04⅛		.04¼		.04¼	
135-137 a.m.p., per lb.	.04⅜		.40½		.04½	
Petrolatum in barrels, in carload lots, per pound:						
Dark Green	.01⅝		.01¾		.01¾	
Amber	.03¼		.03¼		.03¼	
Extra Amber	.03⅜		.03⅜		.03⅜	
Cream	.06		.06		.06	
Lily White	.06¾		.06¾		.06¾	
Snow White	.08		.08		.08	

*Lighterage 5 cents a barrel extra. †Lighterage 6.5 cents per barrel.

NEW YORK (BAYONNE) EXPORT PRICES

	Nov. 18	Nov. 11	Nov. 4
600, steam refined cylinder stocks, in bbls.	.17	.17	.17
635, steam refined	.19	.19	.19
650, steam refined	.23½	.23½	.23
600, Pennsylvania Flash	.24	.24	.25
630, Pennsylvania Flash	.30	.30	.29
600, Warren E	.24	.24	.24
600, Oil City E	.23	.23	.23
Light 140-150 Bright Stocks	.29	.29	.29
Dark 140-150 Bright Stocks	.27	.27	.27

LOS ANGELES EXPORT PRICES

	Nov. 18		Nov. 11		Nov. 4	
Kerosene, water white	.04¾	.06	.04¾	.06	04¾	.06¼
*U. S. Motor Gasoline, 53-55, 437 e.p.	.06½	.07½	.06½	.07½	.06½	.07½
*60-62, 400 endpoint gasoline	.08	.09¼	.08	.09¼	.08	.09¼

*For coastwise and off-shore shipments.

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Corsicana heavy (Oct. 28) ..... $ .75
Other fields ..... See gravity table

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties—See gravity table.

WEST TEXAS

Iatan* ..... Same as North Texas
Crane-Upton-Crockett, Howard and Glasscock, Mitchell and Ector ..... See gravity table, Column 3
Pecos and Winkler ..... See gravity table, Column 9
Chalk† (April 10, 1930) ..... $ .75

*Includes Westbrook Field. †Posted by Humble Oil & Refining Co.

ARKANSAS-NORTH LOUISIANA

Smackover (all grades) (Oct. 30, 1930) ..... $ .70
Carterville, Sarepta and Cotton Valley, below 36 gravity ..... See gravity table
Bellevue (Oct. 30, 1930) 1.00
Urania (Oct. 30, 1930) ..... .75
Calion, heavy (Oct. 30, 1930) ..... .70
East El Dorado (Oct. 30, 1930) ..... .70
Other fields ..... See gravity table

Note—Smackover and Bellevue posted by Standard Oil Co. of Louisiana and Magnolia Petroleum Co.; Urania posted by Louisiana Oil Refining Corp.; East El Dorado posted by Gulf Refining Co. and Magnolia Petroleum Co. Calion posted by Gulf Refining Co.

GULF COAST

Grade A (Oct. 28, 1930)* $1.00
Grade B, 25° and upward ..... See gravity table
Jennings, La. (Oct. 30, 1930)† ..... .80
Refugio (light) ..... Same as Grade B
Refugio (heavy) (Oct. 28, 1930)* ..... .75
Markham (Oct. 28)‡ ..... .85
High Island (Oct. 30, 1930)¶ ..... .75

*Humble Oil & Refining Co. §Texas Pipe Line Co. ¶Gulf Refining Co. of La.

ROCKY MOUNTAIN STATES
Ohio Oil Co.-Midwest Refining Co.

Ilen (Feb. 15, 1930) ..... $ .87
33 gravity and above ..... .87
Under 33 gravity ..... .65
Dutton Creek (Oct. 28, 1930) 1.00
Rock Creek, Wyo. (Oct. 28, 1930) 1.01
Salt Creek ..... See gravity table
Big Muddy (Oct. 28, 1930) 1.00
Grass Creek, heavy (July 27, 1928) ..... .90
Grass Creek, light (Oct. 28, 1930) 1.25
Mule Creek (May 21, 1929) 1.20
Elk Basin (Oct. 28, 1930) 1.25
Lance Creek (Oct. 28, 1930) 1.33
Poison Spider (March 14, 1927) 1.00
Notches (March 14, 1927) ..... .65
Rex Lake (Feburary 22) 1.10
Osage (Nov. 1, 1930) ..... .85
Lost Soldier (Oct. 28) ..... .80
Hamilton Dome (March 14, 1927) ..... .85
Greybull (Oct. 28, 1930) 1.25
Torchlight (Oct. 28, 1930) 1.25
Cat Creek (Oct. 28, 1930) 1.25
Pondera (Montana) (Oct. 28, 1930) 1.45
Sunburst (Montana) (Oct. 28, 1930) 1.55
Hogback (Feb. 15, 1930) 1.40
Artesia (New Mexico) (Oct. 28, 1930) ..... .75
Lea County ..... See gravity table
Border, Mont. 1.55
Red Coulee, Alberta 1.55

Note—Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin. Lost Soldier posted by Producers & Refiners Corp. Artesia posted by Ohio Oil Co. and Continental Oil Co. Border and Red Coulee posted by Imperial Refining Co.

(Continued on Page 126)

CRUDE OIL GRAVITY TABLE

Gravity—	1 Oklahoma-Kansas N. C. Texas	2 North La.-Ark.	3 Crane, Upton, Ector Crockett, Howard, Glasscock, Mitchell (West Texas) Lea, N. M.	4 Wheeler County (Texas Panhandle)	5 Gray County (Texas Panhandle)	6 Carson and Hutchinson (Texas Panhandle)	7 Salt Creek, Wyo.	8 Stephens, Ark.	9 Pecos-Winkler (West Texas)	10 Grade B Gulf Coast and Refugio Texas
Below 25	....	....	.50	....	....	....	....	....	.55	.75
25 to 25.9	....	....	.52	....	....	....	....	....	.57	.92
26 to 26.9	....	....	.54	....	....	....	....	....	.59	.94
27 to 27.9	....	....	.56	....	....	....	....	....	.61	.96
28 to 28.9	....	....	.58	....	....	....	....	....	.63	.98
Below 29	.65	.65	....	....	.50	.45	....	.54	....	....
29 to 29.9	.69	.69	.60	....	.54	.49	.69	.58	.65	1.00
30 to 30.9	.73	.73	.62	....	.58	.53	.73	.62	.67	1.02
31 to 31.9	.77	.77	.64	....	.62	.57	.77	.66	.69	1.04
32 to 32.9	.81	.81	.66	....	.66	.61	.81	.70	.71	1.06
33 to 33.9	.85	.85	.68	....	.70	.65	.85	....	.73	1.08
34 to 34.9	.89	.89	.70	....	.74	.69	.89	....	.75	1.10
35 to 35.9	.92	.92	.72	....	.77	.72	.92	....	.77	1.12
36 to 36.9	.95	.95	.74	....	.80	.75	.95	....	.79	1.14
37 to 37.9	.98	.98	....	....	.83	.78	.98	....	....	1.16
38 to 38.9	1.01	1.01	....	....	.86	.81	....	....	....	1.18
39 to 39.9	1.04	1.04	....	....	.89	.84	....	....	....	1.20
40 and above	1.07	1.07	....	....	.92	.87	....	....	....	1.22

Column 1—Carter Oil Co. posted above prices for Oklahoma and Kansas on October 28. Humble Oil & Refining Co. posted same for North Central Texas on October 28. Magnolia Petroleum Co. posted same for Kansas, Oklahoma, and North Central Texas on October 27 from 29 degrees upward, but posted below 26 degrees at 53 cents; 26-26.9 degrees at 57 cents; 27-27.9 degrees at 61 cents; 28-28.9 degrees at 65 cents. Stanolind Crude Oil Purchasing Co. on November 1 adopted the schedule as listed in table; Prairie Oil & Gas Co. adopted the same on November 1, other companies following. North Central Texas, for the purpose of this table, includes North Texas, Ranger district, Mexia, Powell, Richland, Wortham, Van, Lytton Springs, Currie, Nocona, Moran and Corsicana (light oil).

Column 2—The Texas Company posted above prices on Caddo and Red River crude, up to 39-39.9 degrees. It also posted 40-40.9 degrees at $1.07; 41-41.9 degrees at $1.10; 42-42.9 degrees at $1.13; 44-44.9 degrees at $1.16, and 44 degrees and above $1.19. Standard Oil Co. posted schedule as listed in table on October 30; Magnolia Petroleum Co. on October 30 posted prices as listed, starting at 29 degrees, but posted below 26 degrees, 53 cents; 26-26.9 degrees, 57 cents; 27-27.9 degrees, 61 cents; 28-28.9 degrees, 65 cents. Louisiana Oil Refining Co. adopted Standard of Louisiana prices on October 30. North Louisiana and Arkansas fields included in table are Caddo, Bull Bayou, Crichton, De Soto, Haynesville, Homer, Cotton Valley, Sarepta-Carterville, El Dorado and Rainbow.

Column 3—Posted by Humble Oil & Refining Co. on October 28.
Column 4—Companies quit posting but crude takes present Hutchinson-Carson prices.
Column 5—Humble Oil & Refining Co.
Column 6—Humble Oil & Refining Co., Magnolia and Prairie, October 28.
Column 7—Midwest Refining Co. on October 28. All crude over 37 degrees 98 cents.
Column 8—Louisiana Oil & Refining Co. and Atlantic Oil Producing Co., October 30.
Column 9—Humble Oil & Refining Co., October 28.
Column 10—Humble Oil & Refining Co., October 28. On October 30, Gulf Refining Co. of La. and Gulf Pipe Line Co. of Texas posted as follows for Grade B: Below 25 degrees, 69 cents; 25-25.9 degrees, 71 cents, with a 2-cent differential for each degree upward to and including 40 degrees and above at $1.01. The Texas Company adopted above schedule November 1.

CALIFORNIA CRUDE OIL PRICES

Standard Oil Co. (effective September 15, 1930), Union Oil Co. (effective September 15, 1930)

Gravity—	1 Long Beach, Seal Beach, Alamitos Hts., Huntington Beach, Inglewood, Torrance, Richfield, Olinda, Brea Canyon	2 Whittier, La Habra, Coyote Hills	3 Midway-Sunset, Elk Hills, Lost Hills, Beridge, Buena Vista Hills	4 Montebello	5 Santa Fe Springs	6 Santa Maria, Coalinga	7 Wheeler Ridge	8 Orcutt, Ventura, Rincon	9 Ventura Avenue	10 Elwood Terrace	11 Athens, Rosecrans, Domingues
14 to 14.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
15 to 15.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
16 to 16.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
17 to 17.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
18 to 18.9	.76	.76	.62	.71	....	.62	.62	.65	.76	....	....
19 to 19.9	.82	.82	.70	.77	....	.70	.70	.70	.82	....	....
20 to 20.9	.88	.87	.78	.83	....	.78	.78	.78	.88	....	....
21 to 21.9	.94	.93	.86	.90	.92	.86	.86	.90	.91	....	....
22 to 22.9	1.00	.98	.94	.97	.96	.94	.94	.95	.94	....	....
23 to 23.9	1.07	1.04	1.02	1.05	1.01	1.02	1.02	1.02	1.00	....	....
24 to 24.9	1.12	1.08	1.06	1.08	1.05	1.04	1.04	1.08	1.05	....	1.13
25 to 25.9	1.17	1.12	1.10	1.11	1.09	1.06	1.06	1.11	1.10	....	1.17
26 to 26.9	1.22	1.16	1.14	1.15	1.13	1.08	1.08	1.15	1.15	....	1.22
27 to 27.9	1.26	1.21	1.18	1.19	1.18	1.11	1.10	....	1.19	....	1.27
28 to 28.9	1.30	1.25	1.23	1.23	1.23	1.15	....	....	1.22	....	1.32
29 to 29.9	1.34	1.29	1.29	1.26	1.28	1.19	....	....	1.27	....	1.37
30 to 30.9	1.38	1.33	1.35	1.29	1.33	1.23	....	....	1.31	....	1.42
31 to 31.9	1.43	....	1.40	....	1.38	1.27	....	....	1.36	....	1.47
32 to 32.9	1.48	....	1.47	....	1.43	1.31	....	....	1.41	....	1.53
33 to 33.9	....	....	1.53	....	1.48	1.35	....	....	1.47	....	1.57
34 to 34.9	....	....	1.59	....	1.53	1.39	....	....	1.53	1.32	1.62
35 to 35.9	....	....	1.65	....	1.58	1.43	....	....	1.59	1.39	1.66
36 to 36.9	....	....	....	....	1.63	....	....	....	....	1.46	1.72
37 to 37.9	....	....	....	....	1.68	....	....	....	....	1.53	1.78
38 to 38.9	....	....	....	....	1.73	....	....	....	....	1.60	1.84
39 to 39.9	....	....	....	....	1.78	....	....	....	....	1.66	1.90
40 to 40.9	....	....	....	....	....	....	....	....	....	1.72	1.96
41 to 41.9	....	....	....	....	....	....	....	....	....	1.78	2.02
42 to 42.9	....	....	....	....	....	....	....	....	....	1.84	2.08

Kern River, Newhall-McKittrick, Mount Poso and Round Mountain, 11 to 13.9 gravity, 50 cents; 14 gravity and above, 55 cents, effective March 11. On March 11 the Union Oil Co. posted Midway-Sunset, Elk Hills, Buena Vista, Lost Hills and Coalinga crude as follows: 11 to 13.9 gravity at 50 cents. Fruitvale, posted by General Petroleum Co., 11-13.9, 50 cents; 14 gravity and above, 55 cents.

Column 1—Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 32.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity.

Column 2—Whittier crude, 14 to 32.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 11 to 19.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 11 to 33.9 gravity; Lost Hills, 11 to 34.9 gravity; oil below 14 gravity posted at 50 cents.

(Continued on Page 130)

TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Nov. 18

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Chicago†	16.0	17.0	3.0	11.0
Decatur, Ill.	15.0	16.0	3.0	11.0
E. St. Louis	15.7	14.7	3.0	10.2
Joliet	16.4	17.4	3.0	11.0
Peoria	15.0	14.0	3.0	11.0
Quincy	16.2	17.2	3.0	10.8
Davenport, Ia.	16.5	16.5	3.0	11.3
Des Moines	15.5	15.5	3.0	11.3
Keokuk	16.5	17.5	3.0	11.3
Sioux City	16.1	14.9	3.0	10.9
Duluth, Minn.	17.5	16.4	3.0	11.9
Mankato	14.0	14.0	3.0	11.7
Minneapolis	17.0	17.0	3.0	11.9
La Crosse, Wis.	16.2	17.2	2.0	12.0
Milwaukee	15.1	15.0	2.0	10.9
Madison	15.3	15.3	2.0	11.1
Detroit, Mich.	13.3	12.5	3.0	12.7
Grand Rapids	15.7	16.7	3.0	12.6
Saginaw	14.3	16.9	3.0	12.8
Evansville, Ind.	17.1	18.1	4.0	11.9
Indianapolis	16.9	17.9	4.0	12.1
South Bend	17.4	18.4	4.0	13.2
Fargo, N. D.	18.9	19.9	3.0	13.9
Huron, S. D.	17.5	17.5	4.0	12.7
Sioux Falls	17.8	14.9	4.0	12.4
K. C., Mo.	14.9	15.9	2.0	9.6
Springfield*	15.9	16.9	3.0	10.5
St. Louis*	12.9	13.9	2.5	10.3
St. Joseph	15.6	11.9	2.0	10.1
Wichita, Kans.	14.8	13.8	3.0	9.8
Bartlesville, Ok.	15.5	18.5	4.0	9.5

*State tax 2 cents; remainder city tax.

†Effective June 3, discounts on Q.D.A. in Chicago district 4 cents off service station price on purchases of 500 gallons or more per month and 5 cents on purchases of 1,000 gallons or more per month.

Effective August 5, the following quantity discounts from the service station prices are allowed on monthly sales of gasoline; 500 gallons or more, 3 cents; 75,000 gallons or more, 4½ cents. Discounts are allowed each month and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Denver, Colo.	16.0	19.0	4.0	13.5
Pueblo	17.0	20.0	4.0	13.5
Grand Junction	18 0	21.0	4.0	17.0
Casper, Wyo.	17.0	20.0	4.0	12.0
Cheyenne	18.0	21.0	4.0	13.5
Butte, Mont.	19.0	22.0	5.0	18.0
Billings	20.0	23.0	5.0	16.5
Great Falls	20.0	23.0	5.0	18.0
Helena	22.5	25.5	5.0	18.0
Salt Lake, Utah	20.0	23.0	3.5	17.0
Albu'que, N. M.	16.0	18.0	5.0	15.0
Boise, Idaho	23.5	26.5	5.0	19.0
Twin Falls	23.5	27.5	5.0	19.0

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Dallas, Tex.	14.0	17.0	4.0	11.0
Fort Worth	14.0	17.0	4.0	10.0
Houston	15.0	19.0	4.0	11.0
San Antonio	13.0	17.0	4.0	11.0
El Paso	16.0	20.0	4.0	13.0
Texarkana	17.0	17.0	4.0	12.0
Muskogee*	15.0	18.0	4.0	9.0
Okla. City*	13.0	16.0	4.0	10.0
Tulsa	14.0	18.0	4.0	10.0
Ft. Smith, Ark.	14.5	15.5	5.0	12.0
Little Rock	13.0	14.0	5.0	12.0

*Gasoline tank wagon price to dealers 1 cnt under posted tank wagon.

One-cent rebate made from posted station prices to cash purchasers in Louisiana, Arkansas and Tennessee.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Omaha	17.25	18.25	4.0	11.25
McCook	18.75	20.75	4.0	12.75
Norfolk	17.25	17.25	4.0	11.75
N. Platte	18.75	20.75	4.0	12.50
Scottsbluff	18.75	20.75	4.0	12.25

OHIO

Standard Oil Co. (Ohio)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Ohio points*	18.0	19.0	4.0	†15.0

*Dealers and commercial accounts 2 cents under tank wagon.

†Service station price 16 cents.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
N. Orleans, La.*	13.5	14.5	5.0	12.0
Baton Rouge	14.5	15.5	4.0	13.0
Alexandria†	15.5	16.5	5.0	13.0
Lafayette*	15.5	16.5	5.0	13.0
Lake Charles*	15.5	16.5	5.0	13.0
Shreveport	14.5	15.5	4.0	13.0
Knoxville, Tenn.	18.0	19.0	5.0	15.0
Memphis	16.0	17.0	5.0	13.5
Chattanooga	17.5	18.5	5.0	13.0
Nashville	17.0	18.0	5.0	15.0
Bristol	19.0	20.0	5.0	14.0
Lt. Rock, Ark.	15.0	16.0	5.0	12.0

*Includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

†Gasoline price at Alexandria includes 1-cent tax in parish of Rapides.

One cent discount allowed off station price on all cash purchases. All other station discounts withdrawn October 2, 1930.

Two-cent discount off gasoline tank wagon price to dealers and commercial accounts.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Atlanta, Ga.	20.0	22.0	6.0	13 5
Newark	13.5	14.5	2.0	10.5
Annapolis, Md.	16.0	17.0	4.0	11.0
Baltimore	15.2	16.2	4.0	9.5
Cumberland	17.0	18.0	4.0	12.0
Wash'gton, D.C.	13.7	14.7	2.0	10.7
Danville, Va.	17.8	18.8	5.0	11.8
Norfolk	16.3	17.3	5.0	10.0
Petersburg	17.3	18.3	5.0	11.3
Roanoke	18.0	18.0	5.0	12.0
Richmond	16.7	17.7	5.0	10.7
Charles'n, W.Va.	16.5	17.5	4.0	11.5
Keyser	17.1	18.1	4.0	12.0
Parkersburg	15.2	16.2	4.0	10.2
Wheeling	16.4	17.4	4.0	11.4
Charlotte, N. C.	18.3	19.3	5.0	12.3
Hickory	18.6	19.6	5.0	12.6
Mt. Airy	18.5	19.5	5.0	12.5
Salisbury	18.5	19.5	5.0	12.5
Charleston, S. C.	17.3	18.3	6.0	10.3
Columbia	19.2	20.2	6.0	12.3

A 2-cent per gallon discount off the gasoline tank wagon price is offered to dealers.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Atlanta, Ga.	20.0	22.0	6.0	13.5
Augusta	20.0	22.0	6.0	15.5
Macon	20.0	22.0	6.0	13.0
Savannah	18.0	20.0	6.0	14.0
Birm'ham, Ala.	18.0	20.0	5.0	14.5
Mobile	17.0	19.0	4.0	11.5
Montgomery	18.0	20.0	4.0	15.0
Clarks'le, Miss.	18.0	20.0	5.0	12.5
Jackson	15.0	17.0	5.0	13.0
Natchez	18.0	20.0	5.0	13.0
Gulfport	18.0	18.0	5.0	13.0
Vicksburg	18.0	20.0	5.0	13.0
Jack'ville, Fla.	17.0	19.0	6.0	14.0
Miami	19.0	21.0	6.0	14.0
Pensacola	20.0	21.0	6.0	13.5
Tampa	18.0	20.0	5.0	13.0
Lexington, Ky.	17.0	18.0	5.0	14.5
Covington	18.0	20.0	5.0	14.5
Louisville	16.0	18.0	5.0	12.0
Ashland	18.0	20.0	5.0	15.0
Catlettsburg	18.0	20.0	5.0	15.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspction fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. To Pensacola, Montgomery, Birmingham and Mobile state taxes and 1-cent levy tax. To Gulfport state tax add privileg tax of 2 cents.

Effective April 2, price to dealers 2 cents under posted tank wagon price.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Albany, N. Y.	15.6	17.6	2.0	15.6
New York*	14.3	16.3	2.0	14.3
Buffalo	17.8	19.8	2.0	14.8
Rochester	18.0	20.0	2.0	14.0
Syracuse	18.8	20.8	2.0	14.8
Boston, Mass.	14.5	16.5	2.0	13.5
Augusta, Me.	19.8	21.8	4.0	14.8
Manch't'r, N.H.	19.4	21.4	4.0	14.0
Burlington, Vt.	19.6	21.6	4.0	15.3

*Prices in steel barrels.

PENNSYLVANIA—DELAWARE AND PART NEW ENGLAND

The Atlantic Refining Co.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Pittsburgh, Pa.	14.0	19.0	...	12.0
Philadelphia	14.0	19.0	...	12.0
Scranton	14.0	19.0	...	12.0
Allentown	14.0	19.0	...	12.0
Altoona	14.0	19.0	...	12.0
Erie	14.0	18.0	...	11.0
Dover, Del.	17.0	19.0	3.0	12.0
Wilmington	17.0	19.0	3.0	12.9
Springf'd, Mass.	17.5	19.5	2.0	10.0
Worcester	17.3	19.3	2.0	10.0
Boston	14.5	16.5	2.0	10.6
Providence, R.I.	12.7	14.7	2.0	10.0
Hartford, Conn.	17.5	19.5	2.0	10.0
New Haven	17.6	19.6	2.0	10.0

*Includes tax of 3 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State. The Atlantic Refining Co. recognizes a 2-cent per gallon discount on gasoline from its posted tank wagon markets on sales to dealers for purposes of resale. The Atlantic Refining Co. also recognizes a maximum discount of 2 cents per gallon on gasoline to commercial accounts under contract for one year.

PACIFIC COAST TERRITORY

Standard Oil Co. (California)

	Gasoline Wh'la'le price	Gasoline Retail price	Gasoline Incl'ds tax of	Kero. tank wagon
Fresno	23.0	21.0	3.0	17.0
San Francisco	23.0	21.0	3.0	15.5
Los Angeles	22.5	20.5	3.0	15.5
Reno, Nev.	28.0	26.0	4.0	19.0
Portland, Ore.	24.5	20.0	4.0	16.5
Seattle, Wash.	23.5	20.0	3.0	16.5
Tacoma	23.5	18.5	3.0	16.5
Spokane	27.5	22.0	3.0	20.5
Phoenix, Ariz.	19.5	22.5	4.0	20.0

Above prices are at company's plant or depots as company does not operate stations. A 6-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent.

STANOLIND FURNACE OIL IN CHICAGO

Less than 100 gallons	9.0
100 to 349 gallons	8.0
350 gallons or more	7.5

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	14.7	10.0
V.M.&P. naphtha	16.7	12.0
Cleaner's naphtha	17.0	14.9
Stanisol	17.0	15.4

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

TANK WAGON CHANGES

The Standard Oil Co. of California reduced retail prices November 13 as follows: Portland, Ore., from 22½ cents to 20 cents; Seattle, Wash., 21½ to 20; Tacoma, Wash., 21½ to 18½; Spokane, Wash., 25 to 22.

The Standard Oil Co. (Kentucky) reduced both tank wagon and service station prices 1 cent in Gulfport. Miss., November 8, making the price in each case 18 cents. In Savannah, Ga., it reduced the price 2 cents November 3, making the new prices tank wagon 18 cents and service station 20 cents.

The Standard Oil Co. (Nebraska) advanced both tank wagon and service station prices in Scottsbluff, Neb., November 11, making them 18¾ cents and 20¾ cents respectively.

The Standard Oil Co. (Indiana) November 17 reduced the tank wagon price of gasoline to 13 cents and service station to 16 cents at Decatur, Ill.

CRUDE PRICE CHANGES

Midwest Refining Co. posted Osage, Wyo., at 85 cents, effective November 1.

Imperial Refining Co. posted Border, Mont., and Red Coulee, Alberta, at $1.55, date effective not given.

Seep Purchasing Agency reduced all Pennsylvania Grade crudes 15 cents per barrel, effective November 12. Tide Water Pipe Co. and Pure Oil Co. did likewise.

The Champlin Refining Co. of Enid, Okla., on November 17, posted its own price schedule effective that day, as follows: 32 degrees and below, 71 cents; 33-33.9 degrees, 73 cents, with a 2-cent differential for each degree upward to 40 and above at 87 cents.

The Dale Oil & Refining Co. of Electra, Tex., effective November 16, posted a new schedule as follows: Below 36 gravity, 75 cents; 36-36.9, 79 cents, with a 4-cent differential for each degree up to 40 and above, at 95 cents.

GAS SAFETY MEETING

FORT WORTH, Tex., Nov. 17.—The Oklahoma Natural Gas Corp., Coleman, Tex., held its monthly safety meeting November 12, under the supervision of District Superintendent L. Bunch. E. J. Meade delivered the opening address. Mr. Beaty, superintendent of the water department of the West Texas Utilities Co., and others made interesting talks on safety.

CRUDE OIL PRICES

(Continued from Page 125)

SOUTH CENTRAL AND SOUTHWEST TEXAS

Darst Creek (Oct. 28, 1930)*	$ .90
Luling (Oct. 28)†	.75
Mirando (Oct. 28, 1930)*	.75
Pettus (Oct. 28, 1930)*	1.10
Salt Flat (Oct. 28, 1930)*	.90
Thrall‡	
Lytton Springs (Lockhart). See gravity table	
Dobrowolski (Oct. 25, 1930)‖	
Same as Mid-Continent gravity scale up to and including 38-38.9° at	1.01
Somerset (Oct. 25, 1930)¶	
Same as Mid-Continent gravity scale up to and including 38-38.9° at	1.01

*Posted by Humble Oil & Refining Co. and Magnolia Petroleum Co. †Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co. ‡Thrall prices same as North Central Texas less 19¼ cents per cwt. freight. ¶Grayburg Oil & Refining Co., Pioneer Oil & Refining Co. and Texas Petroleum Products Co. ‖Pioneer Oil & Refining Co.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective Nov. 12, 1930)

Seep Purchasing Agency withdrew from Bradford and Allegany Fields as a purchaser on May 16.

Penna Grade Oil in National Transit Lines (Pennsylvania)	$1.85
Penna Grade Oil in Southwest Pennsylvania Lines (Pennsylvania)	1.80
Penna Grade Oil in Eureka Pipe Line Lines (West Virginia)	1.70
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio) (Sept. 14, 1930)	1.45
Corning Grade Oil in Buckeye Pipe Line Co.'s Lines (Oct. 28, 1930)	1.30
Somerset Oil in Eureka Pipe Line Lines (Kentucky) (August 1, 1930)	1.14
Ragland Grade Oil in Cumberland Pipe Lines (Kentucky)	1.10
Wayne District Oil in Cumberland Pipe Lines	1.17

Tide Water Pipe Co.

Bradford district (Nov. 12, 1930)	2.15
Allegany district (Nov. 12, 1930)	2.15

Pure Oil Co.

Cabin Creek, W. Va. (Nov. 12, 1930)	$1.70
Kelly Creek, W. Va. (Nov. 12, 1930)	1.70
Bradford Hollow, W. Va. (Nov. 12, 1930)	1.70

MIDDLE WESTERN STATES

Ohio Oil Co.
(Effective Oct. 28, 1930)

Lima	$1.10
Wooster	1.40
Illinois	1.30
Indiana	.87
Princeton	1.30
Plymouth	.88
Western Kentucky	1.15
Midland, Mich.*	1.10
Dundee, Mich. (Oct. 28)‖	
Same as Mid-Continent gravity scale	
Upper and Lower Traverse Sands, Mich. (Oct. 28)‖	
Same as Mid-Continent gravity scale	
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky (Oct. 28)‡	.85
Oil City, Ky.‖	1.10
Oil Springs (Canada) (Oct. 28)¶	1.57
Petrolia (Canada) (Oct. 28)¶	1.50

*Posted by Pure Oil Co. ‡Posted by Paragon Development Co. §Posted by Stoll Refining Co. ¶Posted by Imperial Oil Co., Ltd. ‖Posted by Standard of Indiana for boat shipment.

MEXICAN CRUDE

Panuco*	$0.56

*F.o.b. ship, based on October transactions and exclusive of taxes and bar dues.

MELLOWED A HUNDRED MILLION YEARS

At last . . . a pure PENNSYLVANIA grade motor oil for easy starting . . . AND EASY SALES . . . in winter!

Motorists by the thousands saw this startling, striking picture of a prehistoric monster . . . in magazines, newspapers and rotogravures from coast to coast. Then that line *"Mobiline is guaranteed to flow at zero"* caught their eyes. And now they ask for Sinclair Mobiline!

No longer need your Pennsylvania oil customers change to another motor oil for winter driving. The wax that thickens and hardens Pennsylvania oils on cold, wintry days is virtually stripped from Mobiline at as low as 60° F. below zero. This dewaxing process, requiring new oil separators whirling at 15,000 revolutions a minute, takes place in the Sinclair refinery at Wellsville, N. Y. . . . the newest and largest single refinery using Pennsylvania grade crude exclusively.

Here Sinclair Mobiline is refined 100% from Bradford-Allegany crude . . . formed in the Devonian Age, a hundred million years ago . . . the costliest of all Pennsylvania crudes! Here this famous crude is triple-filtered to remove all carbon-forming compounds . . . Mobiline retains its clear greenish color long after other oils have turned black in the crankcase.

Just think it over . . . this striking sales story behind Sinclair Mobiline! You can't beat it! With Sinclair Mobiline this winter you get away from cold weather complaints . . . and get more satisfied, steady customers. Stock up now—winter's here!

Sinclair Refining Company (Inc.), New York, Atlanta, Chicago, Fort Worth, Houston, Kansas City. Sinclair Refining Company of Canada, Ltd., Toronto. Sinclair Refining Company of California, Los Angeles.

SINCLAIR MOBILINE

Reg. U. S. Pat. Off. 1905. Renewed 1925

Pennsylvania MOTOR OIL

Made in the newest, largest single refinery using PENNSYLVANIA grade crude exclusively.

guaranteed by SINCLAIR REFINING CO. INC. to be 100% pure PENNSYLVANIA GRADE OIL

35¢ *per quart*

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Cosden Preferred Holders Organized

Protective Committee Formed to Represent 7 Per Cent Cumulative Stock. Deposits of Shares Asked

A stockholders' protective committee has been formed to represent holders of 7 per cent cumulative preferred stock of Cosden Oil Co. The committee, composed of George R. Baker, vice president, Chatham Phenix National Bank & Trust Co., chairman; Harry M. Blair, president, Associated Bond & Share Corp.; and Charles Weston, vice president of Atlantic National Bank of Boston, has asked for deposits of the stock.

The committee's notice points out that receivers for the Cosden Oil Co. having been appointed in Delaware, holders of the preferred stock have deemed it advisable to act in accord for the protection of their interests through a committee appointed for that purpose. It urges that holders who desire to act in concert with each other and co-operate with the committee deposit their stock as early as possible in order that the committee may take action as it deems essential.

The Chatham Phenix National Bank & Trust Co. has been designated as depositary of the committee, while for the convenience of stockholders residing in New England the Atlantic National Bank, Boston, has been designated as agent of the depositary and in that capacity will receive the deposit of stock.

Dutch Shell

Shell Transport & Trading Co., Ltd. has declared an interim dividend of 10 per cent on the common stock, tax free. A similar dividend was declared in previous year.

Royal Dutch Petroleum Co. has declared usual interim dividend of 10 per cent.

On the Royal Dutch New York shares, three of which are equivalent to each 100-guilder subshare of common stock of the foreign company, the interim dividend of 10 per cent is equivalent to approximately $1.34 a share at the current rate of exchange.

On the American shares of Shell Transport & Trading Co., Ltd., one of which is equal to two foreign shares of ordinary stock, the 10 per cent interim dividend is equivalent to 97 cents a share at the current rate of exchange.

Valvoline Oil

Valvoline Oil Co. reports for nine months ended September 30, 1930, net profit of $246,194 after charges and taxes, equivalent after dividend requirements on 8 per cent preferred stocks, to $5.37 a share on 38,600 no-par shares of common stock.

Sunray Oil

Gross income of Sunray Oil Corp. and subsidiaries for quarter ended September 30, 1930, was $952,950. After deduction of interest, depreciation, depletion, surrendered and abandoned leases, federal taxes, etc., net income amounted to $166,844 comparing with $139,930 in the preceding quarter and $299,885 in the March 31 quarter, making net income of $606,659 for first nine months of this year.

Paragon Refining

Paragon Refining Co. has declared an initial liquidating dividend of $10 on Class B common stock payable November 20. E. W. Edwards, president, states it is impossible at this time to estimate what the final liquidation will bring or when the next payment can be made.

Simms Petroleum

Simms Petroleum Co. has omitted the regular quarterly dividend of 40 cents a share on the capital stock due at this time, according to a statement issued by the company.

"The company has a profit and loss surplus in excess of $4,000,000 representing undistributed earnings of previous years and has current assets approximately six times as great as its current liabilities, with no funded debt or preferred stock," the statement said. "However, in view of the uncertainty as to the duration of present unsettled conditions which have affected current earnings, directors have thought it best for the future interest of the company not to deplete its strong current position by payment of further dividends at the present time."

Simms Petroleum and subsidiaries report for the quarter ended on September 30 a net loss of $154,760 after interest, taxes, drilling costs, depreciation, depletion and other charges. This compares with net loss of $3,208 in the preceding quarter and a net profit of $888,887, or $1.06 a share on the 841,448 shares of stock in the third quarter of 1929. The net loss for the first nine months of this year was $195,523, against a net profit of $1,306,634, or $1.55 a share, in the first nine months of 1929.

Atlantic Refining

Directors of the Atlantic Refining Co. declared the quarterly dividend of 25 cents on the common stock and an extra dividend of 25 cents a share on the same issue. A similar extra dividend was paid at this time last year. Both disbursements are payable December 15 to stock of record November 12. The company recently reported earnings for the nine months ended September 30 of $4,844,000 or $1.80 a share on the common stock. This was sufficient to cover the dividends paid this year, which have totaled $1.50.

Ohio Oil

Ohio Oil Co. declared the regular quarterly dividends of 50 cents on common and $1.50 on the preferred. The common dividend is payable December 15 to stock of record November 18 and the preferred December 15 and November 15, respectively.

S. O. of Nebraska

Standard Oil Co. of Nebraska declared regular quartely dividend of 62½ cents, payable December 20 to stockholders of record November 29. Previously company had been paying extra dividends of 25 cents quarterly.

Vacuum Oil

Earnings of the Vacuum Oil Co. this year will cover dividend requirements and add a substantial amount to surplus account, the company announced. The directors declared an extra dividend of 25 cents a share on the capital stock, which, with the regular quarterly dividends, will make dividend payments for this year $4.25 a share. A statement by the company said in part:

"We are pleased to advise that earnings for the first nine months of this year have been excellent, considering depressed worldwide conditions. As far as can be seen, the company will have a substantial amount of the year's earnings to add to its surplus after payment of its dividends."

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Wednesday, was as follows:

Apr. 9	53.26	July 30	44.89
Apr. 16	52.04	Aug. 6	45.24
Apr. 23	53.39	Aug. 13	43.53
Apr. 30	53.70	Aug. 20	43.79
May 7	50.23	Aug. 27	42.83
May 14	51.67	Sept. 3	42.71
May 21	49.71	Sept. 10	42.84
May 28	50.98	Sept. 17	42.43
June 4	50.94	Sept. 24	40.62
June 11	46.65	Oct. 1	37.78
June 18	41.41	Oct. 8	35.95
June 25	42.37	Oct. 15	35.21
July 2	44.13	Oct. 22	31.88
July 9	44.11	Oct. 29	32.80
July 16	46.42	Nov. 5	31.77
July 23	46.06	Nov. 12	30.18

Tide Water-Associated

Report of Tide Water-Associated Oil Co. and subsidiaries for nine months ended September 30, 1930, shows net income of $7,886,522 after interest, depreciation, depletion, federal taxes, abandoned wells, cancelled leases and other charges, equivalent after dividend requirements on 6 per cent preferred stock, to 78 cents a share on 5,879,448 no-par shares of common stock. This compares with $9,865,235 or $1.17 a share on 5,632,829

(Continued on Page 133)

INDEPENDENT OILS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week Ended November 12 Sales	High	Low	Close	Stocks		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
4½	1	3,400	1⅛	1	1⅛	American Maracaibo	(sh)	700,000	N.P.	....	.....	7½	2¾	9½	3⅛	8⅝	1⅛
21	15¼	700	15¼	15¼	15¼	British American		1,311,321	N.P.	20c	10- 1-30	40	20½	55	32¾	62	7⅞
2¾	¾	1,300	1⅛	1⅛	1⅛	Carib Syndicate		$131,250	25c	....	.....	28¼	15½	4½	3⅞	4⅞	1
44¼	16	46,200	19	17¾	19	Cities Service	(sh)	24,290,359	N.P.	30cA†	10- 1-30	58¾	40½	90⅞	54	68⅛	20
93⅞	87⅛	1,500	90	89⅜	90	Cities Service pfd.	(sh)	1,500,000	N.P.	50cM	10- 1-30	95⅜	87	103½	94½	98¾	84
¾	⅛	1,400	⅛	⅛	⅛	Colombia Syndicate		$2,000,000	$1	....	.....	3⅞	1⅛	3¼	.76	2	½
5⅞	2¾	300	2¾	2¾	2¾	Consolidated Royal		$5,000,000	$10	12½cQ	10-25-30	9¾	6⅜	8⅞	6¼	11⅛	2½
7⅝	3⅝	400	3¾	3⅜	3⅜	Creole Petroleum	(sh)	5,977,873	N.P.	....	.....	14⅞	9½	17½	9½	11¾	5⅝
1	¼	400	⅜	⅜	⅜	Crown Central	(sh)	587,000	N.P.	....	.....	3	.50	3¼	.76	2½	¼
21¾	4⅞	400	5½	5⅛	5⅜	Darby Petroleum (new)		1,019,392	N.P.	25cQ	10-15-30	12	4	33½	3¼	26	6½
11	4⅛	100	4¼	4¼	4¼	Derby Oil & Refining	(sh)	500,000	N.P.	....	.....	2½	74	2¼	1	11	2
60	30	100	42	42	42	Derby Oil & Refining pfd.		48,500	N.P.	....	.....	16¾	4	21⅛	7½	44	20¾
166⅞	75	1,300	77	75⅛	77	Gulf Oil Corp.	(sh)	4,504,921	$25	37½cQ	10- 1-30	118	96¼	165	101⅛	209	115
1⅜	⅜	500	⅜	⅜	⅜	Intercontinental Petroleum		$5,682,000	$5	....	.....	2½	.80	3⅜	1	2⅞	⅜
3	1⅛	300	1⅛	1⅛	1⅛	Kirby Petroleum	(sh)	750,000	N.P.	....	.....	2¼	1⅛	3	1¼	3⅝	1⅛
4¾	¾	500	¾	¾	¾	Leonard Oil & Development		$50,000,000	$25	....	.....	10⅞	5⅛	9⅜	5⅛	6⅛	1
29	6¼	300	8	7⅛	8	Lion Oil & Refining	(sh)	250,000	N.P.	50cQ	10-27-30	27½	20	43⅞	20	38⅞	18
55⅞	20⅛	3,500	22⅜	20⅝	22⅜	Lone Star Gas	(sh)	5,000,000	N.P.	25cQ	9-30-30	59¾	37	69⅛	48½	67⅞	28
½	⅛	500	⅛	⅛	⅛	Magdalena Syndicate	(sh)	850,000	$1	....	.....	2⅞	.80	1⅞	.50	1¼	¼
16	6	100	6	6	6	Margay Oils		160,000	N.P.	....	7-10-30	52	12	48½	32	38½	14
7½	1⅞	100	2	2	2	Mexico-Ohio Oil Co.		500,000	N.P.	....	.....	12⅛	5	8	2¾	6⅜	2¼
¾	⅜	400	⅜	⅜	⅜	Mountain & Gulf		$4,000,000	$1	2cQ	10-15-30	1½	1	1¾	.76	1½	¼
12½	5½	300	5⅞	5½	5⅝	Mountain Producers		$1,682,182	$10	40cQ	10- 1-30	29¼	22¾	28⅞	19½	22⅞	7
3½	1¾	200	2	2	2	New Bradford Oil		$1,095,291	$5	12½cQ	10-15-30	5⅞	4⅝	5⅝	4¼	5	2½
7¼	1⅝	500	1¾	1⅝	1⅝	New Mexico and Arizona		$1,000,000	$1	....	.....	16	9¼	11⅞	7⅛	9⅜	2¼
11¼	3	100	3¼	3¼	3¼	North Central Texas	(sh)	400,000	N.P.	15cQ	9- 2-30	12¾	9½	14¼	8½	18½	6⅛
2½	¼	300	¼	¼	¼	Pandem	(sh)	489,875	N.P.	....	.....	9⅜	3¼	6	2⅛	3½	½
4⅜	1⅝	100	2	2	2	Pantapec Oil	(sh)	1,506,000	N.P.	....	.....	12⅛	7	15⅝	8½	10½	1⅞
..	..	No sales.				Pennok Oil		150,000	N.P.	....	.....	12½	5⅛	7¾	4⅞	7¾	4⅜
10½	6	400	7	6	6	Red Bank Oil	(sh)	250,000	N.P.	....	.....	24⅜	7	18	4⅞	16	9⅝
5⅜	1⅜	200	1½	1½	1½	Reiter-Foster	(sh)	388,584	N.P.	....	12- 2-29	15½	3½	12⅞	4⅛	8½	1⅛
8⅝	2	700	2½	2	2	Ryan Consolidated	(sh)	500,000	N.P.	....	.....	7	4½	12	4⅛	11	3
2½	1⅜	200	1½	1½	1½	Salt Creek Consolidated	(sh)	1,286,300	$10	10cQ	10- 1-30	8	5¼	7¼	5½	5⅞	1⅞
15¼	5¼	2,000	7¼	6	7¼	Salt Creek Producers	(sh)	1,496,859	$10	50cQ	11- 1-30	35½	27¼	35	23⅛	25⅞	9
1	½	100	½	½	½	Savoy Oil		$750,000	$5	....	.....	7	1¼	3½	1	2½	1/16
4½	1	300	1⅜	1⅜	1⅜	Venezuelan Petroleum	(sh)	755,090	$5	....	5-15-30	7⅜	4¼	9⅛	4⅜	6½	1¾
5	2	1,000	2	2	2	Woodley Petroleum		$500,000	$1	....	6-30-29	7	4¾	8¼	4⅞	9½	2
2½	⅜	100	½	½	½	Y Oil & Gas		100,000	N.P.	....	.....	6	1¾	8⅜	2⅛	2⅞	¼

*Including one-half per cent monthly in stock. †Payable monthly and a monthly stock dividend of one-half per cent. x Ex-dividend.

STANDARD OIL STOCKS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week Ended November 12 Sales	Week Ended November 12 High	Week Ended November 12 Low	Week Ended November 12 Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
1	⅜	300	½	⅜	⅜	Atlantic Lobos		499,448	N.P.	....	.....	..	..	..	..	..	..
25	11¼	50	11¼	11¼	11¼	Borne Scrymser		$1,000,000	$25	$18A	10-15-30	59	50	56½	44½	46½	25
69	45	700	45⅛	45	45	Buckeye Pipe Line		$10,000,000	$50	$1Q	9-15-30	60	45	76	53	74½	55
184⅞	105	300	105	105	105	Chesebrough Mfg.		$3,000,000	$25	$1Q*	10-30-30	126	76½	161	117	210	130
65¾	25	200	25	25	25	Cumberland Pipe Line		$1,500,000	$50	$1Q	9-15-30	137	89	114	67	75¾	40
54¾	31¾	50	31¾	31¾	31¾	Eureka Pipe Line		$5,000,000	$100	$1Q	11- 1-30	68½	47	88	64⅛	70½	42
7	2½	200	3	3	3	Galena Signal Oil		$16,000,000	$100	....	.....	13½	3½	13	4¼	6½	3
119	69¼	4,600	70½	69¼	70	Humble Oil & Refining		$74,103,300	$25	50cQ‡	10- 1-30	68½	54	114¾	59½	128	74⅛
320	303	100	320	315	315	Illinois Pipe Line		$20,000,000	$100	$4.50	9-15-30	182	123¾	290½	176½	340½	260
30	15⅞	300	17¼	16⅝	17¼	Imperial Oil of Canada (new)	(sh)	26,421,768	N.P.	12½cQ	9- 2-30	64¾	37¾	104	56¾	41	22
41	21¾	400	22	21¾	21¾	Indiana Pipe Line (new)		$3,000,000	$10	50cQ‡	11-15-30	94½	61	91⅞	74⅜	41⅞	26
24	13⅜	3,700	13¾	13⅜	13½	International Petroleum (new)	(sh)	14,247,088	N.P.	12½cQ‡	9-16-30	29	28¼	55	35	30⅜	15
22⅜	13	200	13	13	13	National Transit		$6,362,500	$12.50	25cQ‡	9-15-30	24	13½	32⅜	19⅜	25⅛	10⅛
21⅜	10⅛	400	15½	14	15½	New York Transit		$1,000,000	$10	40cQ†	9-15-30	44½	31¼	75	38½	17½	10
54	30⅛	100	31	31	31	Northern Pipe Line		$2,000,000	$50	$2SA	7- 1-30	100	70	69	56½	63	41
32	17	1,400	18½	17	17	Penn Mex Fuel		$10,000,000	$25	$1	8-22-30	39	12	84	28	44½	20
33	7¾	100	8½	8½	8½	Solar Refining		$4,000,000	$25	....	12-20-29	..	..	..	..	50	29
20⅞	9	200	11	9	11	Southern Pipe Line		$1,000,000	$10	5cQ	9- 2-30	27¼	15½	19	15	22½	13
45⅞	22	800	24	22⅝	22⅝	South Penn Oil		$30,000,000	$25	50cQ	9-30-30	41½	35	71⅞	36¾	60¼	35⅛
64	39	100	39¼	39	39¼	Southwest Pennsylvania Pipe Lines		$1,750,000	$50	$1Q	1-10-29	83	55½	102	70	70	60
59⅞	35⅛	9,300	36½	35½	36½	Standard Oil of Indiana		$348,175,069	$25	62½cQ‡	9-15-30	81½	64⅜	95⅞	70⅞	63	45
40½	20⅛	5,900	22½	20⅜	22½	Standard Oil of Kentucky		$25,654,516	$10	40cQ	9-30-30	130	111½	179¾	122¼	46⅞	29
48⅞	36	100	36	36	36	Standard Oil of Nebraska		$4,649,225	$25	62½cQ‡	9-20-30	49½	40	54⅞	39⅞	50¼	40
108½	50⅛	50	53¼	53¼	53¼	Standard Oil of Ohio		$14,000,000	$25	62½cQ	10- 1-30	87½	72	134	71	129	60
10	4	100	4	4	4	Swan-Finch Co.		$861,466	$25	.42⅞cQ	1-15-29	21	14½	23½	16	18	10
97⅞	59⅛	3,500	62¼	61⅛	62	Vacuum Oil Co.		$126,180,350	$25	$1Q	9-20-30	..	..	111	72	133¾	75

*Plus 50 cents extra. †Plus 10 cents extra. ‡Plus 25 cents extra. x Ex-dividend.

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bros. & Co., Members of the New York Stock Exchange and Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week Ended November 12 Sales	Week Ended November 12 High	Week Ended November 12 Low	Week Ended November 12 Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
31½	18	1,700	21¾	20¼	21¾	Amerada Corp.	(sh)	922,075	N.P.	50cQ	10-31-30	37⅝	27⅝	43⅞	27⅛	42⅝	17½
37	8¼	300	12¼	10⅞	10⅞	American Republics Corp.	(sh)	209,180	N.P.	....	.....	82½	35⅛	85	51⅛	64⅜	12½
51	30⅞	30	35	33	35	Associated Oil		$57,260,300	$25	50cQ	9-30-30	50¼	35	53⅜	37½	47¼	34½
51⅜	18⅝	8,000	20⅜	19¼	20⅜	Atlantic Refining		$66,763,775	$25	25cQ†	9-15-30	131⅜	104	66⅜	50	77⅞	30
34	12⅝	4,100	14¼	13⅜	14¼	Barnsdall Corp. A		$56,546,600	$25	50cQ	11- 6-30	35½	20¾	54	20	49⅛	20
30½	10	14,800	11⅛	10⅜	11⅛	Continental Oil of Delaware	(sh)	4,741,554	N.P.	....	12-15-27	..	..	..	..	47⅛	18
71⅛	28⅛	1,900	29¼	28⅞	29¼	General Asphalt	(sh)	413,333	N.P.	$1Q	9-15-30	96¾	65	94⅞	68	94⅜	42¼
116⅞	33⅛	1,800	37½	36	37½	Houston Oil		$24,968,600	$100	....	10-17-30	175¾	60⅛	167	79	109	26
11¾	7⅝	2,700	8½	8	8⅜	Houston Oil (new)	(sh)	998,744	$25	....	.....	..	..	..	..	..	..
32	11⅛	2,400	15	13½	15	Independent Oil & Gas	(sh)	1,362,295	N.P.	37½c	10- 2-30	32¾	17⅝	38⅜	21¾	39⅜	17⅜
28⅜	3¼	9,500	3⅞	3⅝	3⅞	Indian Refining		$12,565,070	$10	....	.....	12⅛	7⅝	39⅝	9	53	13⅛
20½	21¼	1,900	27⅛	27⅛	27⅛	Lago Oil & Transport	(sh)	3,992,122	N.P.	....	5- 2-27	37¾	20½	39⅛	27⅜	38⅜	16½
12	4⅝	3,100	5⅛	4¾	4¾	Louisiana Oil Refining	(sh)	1,190,063	N.P.	....	.....	18⅛	10	19¾	9⅜	18	7
10⅜	2	500	2⅝	2⅝	2⅝	Maracaibo Oil	(sh)	330,000	N.P.	....	.....	22¾	12	25½	12½	18½	5⅛
37	9¾	6,000	11⅜	10⅛	11	Mexican Seaboard	(sh)	1,244,383	N.P.	....	10- 1-24	9¼	3	72	4⅝	59⅜	8¼
33	15½	2,000	16⅝	16	16⅝	Mid-Continent Petroleum	(sh)	1,857,912	N.P.	50cQ	11-15-30	39⅜	25½	44½	25⅛	39⅞	22⅛
32	16⅛	10,000	18⅜	16⅛	17⅞	Ohio Oil	(sh)	6,648,052	N.P.	50cQ	9-15-30	67⅞	52	84	58½	79⅞	64¼
64¼	42	100	42	42	42	Pan American P. & T.		$50,084,700	$50	....	12-20-27	65⅞	40⅛	50⅞	38¼	69	40½
67½	41	900	42¼	41	42¼	Pan American P. & T. "B"		$121,110,650	$50	....	12-20-27	66⅜	40¼	58⅞	37⅜	69¼	40½
..	..	No sales.				Pan American Western "B"		400,000	N.P.	....	1-30-27	37⅞	16¾	28⅜	15½	18½	13⅝
12¾	2⅛	200	2½	2½	2½	Panhandle P. & R.	(sh)	199,370	N.P.	....	.....	18⅞	8	21¾	11½	15¼	3
80	47½	100	70	70	70	Panhandle P. & R. pfd.		$2,564,400	$100	....	7- 2-30	83	54	108	70	76	47½
44¾	16⅜	13,600	19⅞	18¼	19¾	Phillips Petroleum	(sh)	2,593,075	N.P.	50cQ	10- 2-30	60¼	36¼	53⅞	35¼	47	24¼
2½	¾	500	⅝	⅝	⅝	Pierce Oil Corp.		$29,622,831	$25	....	.....	1⅛	½	5¼	½	3⅜	1
7⅛	2¼	2,900	2½	2¼	2⅜	Pierce Petroleum	(sh)	2,500,000	N.P.	10c	11-15-30	5½	2½	7	3½	5⅞	½
54	18½	1,600	19½	18½	19½	Prairie Oil & Gas		$60,848,000	$25	50cQ*	9-30-30	55½	45⅝	68	46	65⅞	40½
60	25⅛	2,700	26	24⅜	24⅜	Prairie Pipe Line		$101,250,000	$25	75cQ†	9-30-30	190	130⅜	280	172	65	45
11⅞	3½	300	3½	3½	3½	Producers & Refiners		$37,438,950	$50	....	9-15-23	33⅞	16¾	29⅞	16	25⅞	4
40	15	30	18½	16	16	Producers & Refiners pfd.		$2,845,350	$50	....	5- 4-25	50	36⅞	49⅝	41	46¾	25½
27¼	10⅜	3,700	11	10⅜	11	Pure Oil		$75,959,250	$25	37½cQ	9- 1-30	33½	25	31⅝	19	30⅜	20
8⅜	5⅞	5,600	6⅛	5⅞	6⅛	Richfield Oil (new)		$52,410,875	N.P.	....	9- 1-30	28⅝	25⅜	56	23	49⅝	20
25⅜	7	1,800	7¼	7	7¼	Rio Grande Oil	(sh)	1,236,270	N.P.	....	7-25-30	..	..	37½	32	42½	15
56½	38⅜	12,200	40½	39½	40½	Royal Dutch, N. Y.	(sh)	611,303	...	$1.875	8-13-30	54½	44¼	64	44⅝	64	43⅛
48⅜	35⅝	30	35⅝	35⅝	35⅝	Shell Transport & Trading Co.		£23,985,000	£1	$1.45	7- 8-30	48⅝	40½	47⅞	41⅜	51½	40⅝
25½	8	8,800	8⅝	7½	8¼	Shell Union Oil	(sh)	13,066,497	N.P.	....	6-30-30	31¾	23⅝	39¼	23¼	31⅜	19
37	7	800	8½	7½	8½	Simms Petroleum		$8,353,620	$10	40cQ	9-15-30	25⅜	14¼	27¼	18⅛	40⅛	15
32	11⅜	11,900	12½	11⅜	12	Sinclair Consolidated	(sh)	5,500,000	N.P.	50cQ	10-15-30	22⅜	15	46¾	17⅜	45	21
112¼	106	200	107¾	107¾	107¾	Sinclair Consolidated pfd.		$16,025,250	$100	$2Q	11-15-30	104½	97	110	102½	111	103
42	10¼	3,000	14⅜	13	14⅜	Skelly Oil		$27,441,250	$25	50cQ	9-15-30	37⅜	24⅛	42⅝	25	40½	28
75	49¼	8,700	51½	49½	51½	Standard of California	(sh)	12,594,098	N.P.	62½cQ	9-15-30	60¾	50⅜	80	63	81⅞	51½
49	17⅞	900	19	18⅝	19	Standard of Kansas		$8,000,000	$25	50cQ	9-15-30	20⅞	14⅝	37¾	15	33¾	18
84⅞	49	41,400	52	49¾	52	Standard Oil of New Jersey		$634,999,200	$25	25cQ*	9-15-30	41⅜	35⅛	59⅜	37¾	83	49
40⅜	25	5,500	25½	25	25⅜	Standard Oil of New York		$445,223,675	$25	40cQ	9-15-30	34⅛	19¾	33¼	28¾	48⅛	31¾
70	49⅝	1,100	50½	49⅝	49⅝	Sun Oil	(sh)	1,416,869	N.P.	25cQ	9-15-30	34⅞	30	77	31½	68⅜	55
9⅜	1¼	1,000	1⅜	1⅛	1¼	Superior Oil Corp.	(sh)	776,979	N.P.	....	12-20-20	..	..	..	..	24	5¼
60½	35	6,700	37¾	36⅛	37¾	The Texas Corp.		$246,204,900	$25	75cQ	10- 1-30	58	45	74¾	50	71⅞	50
14½	5½	400	5¾	5½	5½	Texas Pacific Coal & Oil Co.		$9,304,890	$10	2½%A‡	12-31-29	18⅞	12	26⅝	12⅛	23⅞	9½
31	15⅛	200	15½	15½	15½	Tide Water Oil	(sh)	2,191,759	N.P.	20cQ	9-30-30	29⅛	19	41½	19⅝	40	14
94⅞	82	100	82	82	82	Tide Water 5% pfd.	(sh)	19,947,000	$100	$1.25Q	11-15-30	90⅛	85	100⅛	86	97½	85⅛
17¾	8	6,300	8¼	8	8¼	Tide Water Associated	(sh)	5,560,424	N.P.	30cS	8-15-30	19⅛	15¾	25	14¾	23½	10
89¾	69¾	100	70	70	70	Tide Water Associated pfd.		$73,284,500	...	$1.50Q	10- 1-30	..	..	..	..	90⅞	74⅛
50	25⅛	3,200	27½	25⅛	27½	Union Oil of California		$104,342,375	$25	50cQ	11-10-30	56½	39⅝	58	42⅜	57	42⅛
38½	24	200	25¼	25	25¼	Union Tank Car	(sh)	1,254,048	$100	40cQ	9- 2-30	127½	94	128⅛	110	163¾	121⅞
27	6¼	1,800	6⅜	6¼	6⅜	Warner-Quinlan	(sh)	632,948	N.P.	....	7- 1-30	34½	24½	44⅞	26	42⅞	15
21	9⅛	400	9¼	9⅛	9⅛	Wilcox Oil & Gas	(sh)	428,907	N.P.	....	5-10-28	..	..	..	..	29¾	12⅞

*Plus extra dividend of 25 cents. †Plus extra dividend of 50 cents. ‡Payable in stock. x Ex-dividend.

In comparing highs and lows for the several years in the three tables, it will be necessary to take into consideration cases where there have been splits in the stock.

REPORT OF AMERICAN PETROLEUM INSTITUTE COMMITTEE ON ECONOMICS

(Continued from Page 33)

ESTIMATED GASOLINE OUTPUT OF REFINERIES TO ARRIVE AT 40,000,000 STOCKS APRIL 1, 1931
(Based on assumption that estimated shipments of 198,800,000 bbls. Oct. 1, 1930, to April 1, 1931, materialize)
(Figures in barrels of 42 gallons)

	East Coast	Appalachian	Indiana, Illinois, Kentucky	Oklahoma, Kansas, Missouri	Inland Texas	North La.-Ark.	Texas Gulf	Louisiana Gulf	Rocky Mountain	California	Total United States
October, 1930	4,687,000	1,168,000	5,008,000	4,951,000	1,872,000	722,000	5,965,000	1,954,000	983,000	6,852,000	34,162,000
November, 1930	4,538,000	1,130,000	4,845,000	4,791,000	1,810,000	698,000	5,771,000	1,891,000	953,000	6,630,000	33,057,000
December, 1930	4,687,000	1,168,000	5,008,000	4,951,000	1,872,000	722,000	5,965,000	1,954,000	983,000	6,852,000	34,162,000
January, 1931	4,687,000	1,168,000	5,008,000	4,951,000	1,872,000	722,000	5,965,000	1,954,000	983,000	6,852,000	34,162,000
February, 1931	4,223,000	1,054,000	4,522,000	4,471,000	1,690,000	652,000	5,387,000	1,766,000	889,000	6,189,000	30,853,000
March, 1931	4,687,000	1,168,000	5,008,000	4,951,000	1,872,000	722,000	5,965,000	1,954,000	983,000	6,852,000	34,162,000
Total	27,519,000	6,856,000	29,399,000	29,066,000	10,988,000	4,238,000	35,018,000	11,473,000	5,774,000	40,227,000	200,558,000
Daily average	151,203	37,670	161,533	159,703	60,374	23,286	192,407	63,038	31,725	221,028	1,101,967

ESTIMATED SHIPMENTS OF GASOLINE USED IN THE ABOVE PRODUCTION ESTIMATES
(Figures in barrels of 42 gallons)

	East Coast	Appalachian	Indiana, Illinois, Kentucky	Oklahoma, Kansas, Missouri	Inland Texas	North La.-Ark.	Texas Gulf	Louisiana Gulf	Rocky Mountain	California	Total United States
October, 1930	5,221,000	1,284,000	5,733,000	5,439,000	2,096,000	736,000	5,711,000	1,847,000	1,401,000	7,313,000	36,781,000
November, 1930	4,837,000	1,202,000	5,243,000	4,941,000	1,860,000	743,000	5,446,000	1,689,000	1,048,000	6,894,000	33,903,000
December, 1930	4,561,000	1,069,000	4,710,000	4,565,000	1,957,000	703,000	5,583,000	1,761,000	837,000	7,439,000	33,185,000
January, 1931	3,914,000	999,000	4,058,000	4,329,000	1,883,000	677,000	5,158,000	1,820,000	802,000	6,597,000	30,237,000
February, 1931	3,547,000	971,000	4,004,000	4,102,000	1,849,000	653,000	5,348,000	1,812,000	798,000	6,698,000	29,782,000
March, 1931	4,221,000	1,175,000	5,098,000	5,092,000	2,124,000	782,000	6,172,000	1,767,000	1,018,000	7,463,000	34,912,000
Total	26,301,000	6,700,000	28,846,000	28,468,000	11,769,000	4,294,000	33,418,000	10,696,000	5,904,000	42,404,000	198,800,000

Note—In the above table covering estimated shipments the division of totals for each group for the six months period is based on seasonal variation shown by the combined experience of corresponding periods ending with March of the years 1925 to 1930, inclusive.

CONSOLIDATED STATEMENT OF ESTIMATED GASOLINE PRODUCTION, SHIPMENTS AND RESULTANT STOCKS
(Based on assumption that 40,000,000 bbls. is adequate on April 1 1931)
(Figures in barrels of 42 gallons)

Estimated stocks—	East Coast	Appalachian	Indiana, Illinois, Kentucky	Oklahoma, Kansas, Missouri	Inland Texas	North La.-Ark.	Texas Gulf	Louisiana Gulf	Rocky Mts.	California	Total United States
October 1, 1930	5,425,000	1,168,000	5,462,000	3,086,000	1,981,000	246,000	3,757,000	858,000	1,896,000	14,363,000	38,242,000
October, 1930:											
Production	4,687,000	1,168,000	5,008,000	4,951,000	1,872,000	722,000	5,965,000	1,954,000	983,000	6,852,000	34,162,000
Shipments	5,221,000	1,284,000	5,733,000	5,439,000	2,096,000	736,000	5,711,000	1,847,000	1,401,000	7,313,000	36,781,000
Closing stocks	4,891,000	1,052,000	4,737,000	2,598,000	1,757,000	232,000	4,011,000	965,000	1,478,000	13,902,000	35,623,000
November, 1930:											
Production	4,538,000	1,130,000	4,845,000	4,791,000	1,810,000	698,000	5,771,000	1,891,000	953,000	6,630,000	33,057,000
Shipments	4,837,000	1,202,000	5,234,000	4,941,000	1,860,000	743,000	5,446,000	1,689,000	1,048,000	6,894,000	33,903,000
Closing stocks	4,592,000	980,000	4,339,000	2,448,000	1,707,000	187,000	4,336,000	1,167,000	1,383,000	13,638,000	34,777,000
December, 1930:											
Production	4,687,000	1,168,000	5,008,000	4,951,000	1,872,000	722,000	5,965,000	1,954,000	983,000	6,852,000	34,162,000
Shipments	4,561,000	1,069,000	4,710,000	4,565,000	1,957,000	703,000	5,583,000	1,761,000	837,000	7,439,000	33,185,000
Closing stocks	4,718,000	1,079,000	4,637,000	2,834,000	1,622,000	206,000	4,718,000	1,360,000	1,529,000	13,051,000	35,754,000
January, 1931:											
Production	4,687,000	1,168,000	5,008,000	4,951,000	1,872,000	722,000	5,965,000	1,954,000	983,000	6,852,000	34,162,000
Shipments	3,914,000	999,000	4,058,000	4,329,000	1,883,000	677,000	5,158,000	1,820,000	802,000	6,597,000	30,237,000
Closing stocks	5,491,000	1,248,000	5,587,000	3,456,000	1,611,000	251,000	5,525,000	1,494,000	1,710,000	13,306,000	39,679,000
February, 1931:											
Production	4,223,000	1,054,000	4,522,000	4,471,000	1,690,000	652,000	5,387,000	1,766,000	889,000	6,189,000	30,853,000
Shipments	3,547,000	971,000	4,004,000	4,102,000	1,849,000	653,000	5,348,000	1,812,000	798,000	6,698,000	29,782,000
Closing stocks	6,177,000	1,331,000	6,105,000	3,825,000	1,452,000	250,000	5,564,000	1,448,000	1,801,000	12,797,000	40,750,000
March, 1931:											
Production	4,687,000	1,168,000	5,008,000	4,951,000	1,872,000	722,000	5,965,000	1,954,000	983,000	6,852,000	34,162,000
Shipments	4,221,000	1,175,000	5,098,000	5,092,000	2,124,000	782,000	6,172,000	1,767,000	1,018,000	7,463,000	34,912,000
Closing stocks	6,643,000	1,324,000	6,015,000	3,684,000	1,200,000	190,000	5,357,000	1,636,000	1,766,000	12,186,000	40,000,000
Total six months:											
Production	27,519,000	6,856,000	29,399,000	29,066,000	10,988,000	4,238,000	35,018,000	11,473,000	5,774,000	40,227,000	200,558,000
Shipments	26,301,000	6,700,000	28,846,000	28,468,000	11,769,000	4,294,000	33,418,000	10,696,000	5,904,000	42,404,000	198,800,000
Closing stocks	6,643,000	1,324,000	6,015,000	3,684,000	1,200,000	190,000	5,357,000	1,636,000	1,766,000	12,186,000	40,000,000

GASOLINE STOCK SITUATION APRIL 1, 1931, BASED ON PRESENT TENDENCY OF SUPPLY
(Barrels of 42 U. S. Gallons)

	Total	Daily
SUPPLY:		
Straight run gasoline (6 months)	108,700,000	597,300
Cracked gasoline (6 months)	86,300,000	474,200
Natural gasoline blended at refineries (6 months)	23,500,000	129,100
Total refinery production	218,500,000	1,200,600
Imports (6 months)	10,000,000	54,900
Total gasoline supply	228,500,000	1,255,500
DEMAND:		
Domestic demand	175,400,000 963,800	
Exports	32,600,000 179,100	
	208,000,000	1,142,900
Surplus	20,500,000	112,600
STOCKS:		
Gasoline stocks Oct. 1	38,200,000	
Surplus 10/1/30 to 4/1/31	20,500,000	
Stocks April 1, 1931	58,700,000	

If instead of the 58,700,000 bbls. of gasoline indicated above as being in storage April 1, 1931, lower stocks are desirable—say 45,000,000, 40,000,000 or 35,000,000 bbls., the supply would have to be reduced 6.6%, 8.2% or 10.4% respectively. Details follow for each stock condition:

	Present rate Running	Reduced 6.6%	Reduced 8.2%	Reduced 10.4%
Straight run	108,700,000	102,300,000	99,800,000	97,400,000
Cracked	86,300,000	81,100,000	79,200,000	77,300,000
Natural	23,500,000	22,100,000	21,600,000	21,100,000
Imports	10,000,000	9,400,000	9,200,000	9,000,000
Total supply	228,500,000	214,800,000	209,800,000	204,800,000
Dom. Con. & Exports	208,000,000	208,000,000	208,000,000	208,000,000
To or from storage	+20,500,000	+6,800,000	+1,800,000	—3,200,000
Gasoline stocks Oct. 1, 1930	38,200,000	38,200,000	38,200,000	38,200,000
Stock situation April 1, 1931	58,700,000	45,000,000	40,000,000	35,000,000

GAS AND FUEL OIL SITUATION EAST OF CALIFORNIA
(Figures in barrels of 42 gallons)
October 1, 1930 to April 1, 1931
Based on Gasoline Stock Situation as of April 1, 1931 of:

	35,000,000 Total	35,000,000 Dly. av.	40,000,000 Total	40,000,000 Dly. av.	45,000,000 Total	45,000,000 Dly. av.
Crude to stills	404,149,000	2,221,600	413,373,000	2,271,000	424,066,000	2,330,000
California	85,849,000	472,000	87,300,000	483,000	90,026,000	495,000
East of California	318,300,000	1,749,000	325,473,000	1,788,000	334,040,000	1,835,000
Gas and fuel yield	34.5%		34.5%		34.5%	
Production	109,813,000	603,000	112,288,000	617,000	115,244,000	633,000
Imports	15,000,000	83,000	15,000,000	83,000	15,000,000	83,000
Intercoastal	3,000,000	16,000	3,000,000	16,000	3,000,000	16,000
Total supply	127,813,000	702,000	130,288,000	716,000	133,244,000	732,000
Total demand	146,000,000	802,000	146,000,000	802,000	146,000,000	802,000
From stock	18,187,000	100,000	15,712,000	86,000	12,756,000	70,000
Stocks:						
October 1, 1930	35,820,000		35,820,000		35,820,000	
April 1, 1931	17,633,000		20,108,000		23,064,000	

CRUDE OIL SITUATION IN THE UNITED STATES
(Figures in barrels of 42 gallons)
October 1 1930 to April 1, 1931
Based on Gasoline Stock Situation as of April 1, 1931 of:

	35,000,000 Total	35,000,000 Dly. av.	40,000,000 Total	40,000,000 Dly. av.	45,000,000 Total	45,000,000 Dly. av.
Crude to stills	404,149,000	2,221,600	413,373,000	2,271,000	424,066,000	2,330,000
Exports	12,000,000	66,000	12,000,000	66,000	12,000,000	66,000
Used as such	10,000,000	55,000	10,000,000	55,000	10,000,000	55,000
Crude required	426,149,000	2,342,000	435,373,000	2,392,000	446,066,000	2,451,000
Imports	28,238,000	155,000	28,875,000	158,000	29,538,000	162,000
Needed U. S. supply	397,911,000	2,187,000	406,498,000	2,234,000	416,528,000	2,289,000

GAS AND FUEL OIL SITUATION EAST OF CALIFORNIA
40,000,000 Gasoline Stock Basis

	Stocks Oct. 1, 1930	Production	Shipments	Stocks Apr. 1, 1931
East Coast	11,127,000	34,580,000	39,309,000	6,408,000
Appalachian	1,227,000	2,510,000	2,752,000	985,000
Ind., Ill., Ky.	4,313,000	12,630,000	15,526,000	1,417,000
Okla., Kans., Mo.	5,265,000	13,230,000	15,271,000	3,224,000
Texas	10,328,000	34,030,000	39,027,000	5,401,000
Louisiana-Arkansas	2,223,000	13,310,000	13,440,000	2,093,000
Rocky Mountain	1,267,000	1,998,000	2,676,000	589,000
Total East of California	35,520,000	112,288,000	128,000,000	20,108,000

CALIFORNIA CRUDE OIL PRICES

(Continued from Page 125)

Column 5—Price change posted by Standard of California September 16.
Column 6—Oil below 14 gravity posted at 45 cents.
Column 8—Posted by General Petroleum Co.
Kettleman Hills—Union Oil Co., September 22, 35 to 39 gravity, $1.10; 40 to 44 gravity, $1.20; 45 to 49 gravity, $1.35; 50 to 54 gravity, $1.50; 55 gravity and above, $1.65. Standard Oil Co. of California, 55 gravity and above, $1.65.

NO NEED OF CHANGES IN NATURAL GASOLINE

(Continued from Page 121)

method finally culminated in the development of the Reid method which found general acceptance among oil companies and was finally adopted by the Bureau of Explosives and put into effect as of October 1, 1930. While the grades affected were chiefly natural gasoline in connection with the Class 4 cars, and while the vapor pressure limits were raised from 10 and 20 pounds to 33 and 45 pounds, respectively, it does not follow that a "wilder" or more unstable product can now be shipped. Certainly the difference in pressure is not an index of the difference in character of the product. The old method did not take into account the absolute pressure, and, when allowance is made therefore, it will readily be seen that there is only approximately a 3-pound differential between the old and new methods, if, in fact, the old method can be checked satisfactorily at all.

STUDY CHEMISTRY OF ORGANIC SULPHUR

(Continued from Page 38)

compounds. And the outlook from such a survey is distinctly encouraging.

The alcohols undergo two well-known types of decomposition, dehydrogenation and dehydration, which may be represented by the generalized equations:

$$C_nH_{2n+1}OH \longrightarrow \underset{\text{Aldehyde}}{C_nH_{2n}O} + H_2$$

$$C_nH_{2n+1}OH \longrightarrow C_nH_{2n} + \underset{\text{Hydrocarbon}}{H_2O}$$

The former reaction is secured at a variety of metallic surfaces and also at the surface of a limited number of metallic oxides, such, for example, as zinc, manganese and magnesium oxides. The latter process of dehydration is secured at various well-known oxide surfaces such as those of silica, alumina and thoria. The activity of these compounds in accelerating such reactions has been associated with their specific activity toward hydrogen and water, respectively. Hence, by analogy, one might expect similar reactions with respect to the mercaptans:

$$C_nH_{2n+1}SH \longrightarrow C_nH_{2n}S + H_2$$

$$C\ H_{2n+1}SH \longrightarrow C_nH_{2n} + H_2S$$

of which only the latter would be of interest for purposes of sulphur elimination. By analogy with the oxides useful in processes of dehydration one might expect activity in such a process from compounds of known specificity toward sulphur compounds. It is well known, though perhaps not realized in this regard, that certain classes of compounds are essentially specific toward carbon-sulphur compounds, as witness the employment of such sulphur compounds in processes of oil flotation for concentration of sulphide minerals. The correlation of these data at once suggests that the analog of oxides in dehydration processes should be sulphides in processes for the elimination of sulphur.

Reaction of Mercaptans

One further reaction of mercaptans might here be noted, its hydrogenation to yield saturated hydrocarbon and hydrogen sulphide:

$$C_nH_{2n+1}SH + H_2 \longrightarrow C_nH_{2n+2} + H_2S$$

The analogous reaction with the alcohols is not readily accomplished, but the reaction of amines and hydrogen to yield ammonia and saturated hydrocarbon is readily secured in contact with metal catalysts. One might expect, therefore, the hydrogenation of mercaptans in presence of metal catalysts, the efficiency of the process being determined by the availability of the metal surface under the operating conditions. Here let it be once again emphasized that elevation of hydrogen pressure would tend to secure such an objective.

Passing to the sulphides, one may predict, by analogy with the ethers, that their decomposition according to the reaction:

$$(C_nH_{2n+1})_2S = 2C_nH_{2n+2} + H_2S$$

will occur on catalysts for the corresponding reaction of hydrogen sulphide elimination from mercaptans, but at higher temperatures and less efficiently. The dehydration of the ethers is achieved on alcohol dehydration catalysts, but at higher temperatures. The reaction of the sulphides with hydrogen:

$$(C_nH_{2n+1})_2S + 2H_2 \longrightarrow 2C_nH_{2n+2} + H_2S$$

will, therefore, have a correspondingly greater relative importance than in the case of the mercaptans.

The contact reactions of cyclic sulphur compounds, such as thiophanes and thiophenes, may be deduced from the reactions of analogous cyclic bodies such as the furfuranes, the pyrrols, pyrrolidines and pyridine ring systems. In these cases the opening of the cyclic system and elimination of the oxygen or nitrogen content requires a higher catalytic activity of contact agent than with the open-chain compounds. Precisely in this field of cyclic sulphur-carbon compounds, then, may difficulty of sulphur elimination be anticipated.

Practical Investigations

That this elementary theoretical survey of the field of catalytic reactions of organic sulphur compounds conforms to reality in practical investigations is evident from the work that is being conducted under Project No. 40 of the American Petroleum Institute's fundamental research program. It is not intended here to give the detailed account of these researches with all the various experimental records. These will be found in a series of separate publications, the first two of which will appear in a forthcoming issue of Industrial and Engineering Chemistry. Here, rather, a resume of the results obtained will be presented, and an indication will be given of their importance as an outline survey of the whole field and as an index to the need for a vigorous development of this type of fundamental research.

In the first communication concerning the work of Project No. 40, it will be demonstrated that metallic hydrogenation catalysts, such as reduced nickel and iron, exhibit a specific affinity for the sulphur compounds present in three typical high-sulphur naphthas, two straightrun and one cracked naphtha, containing respectively 0.410, 0.278 and 0.357 per cent sulphur. An extended investigation of the action of metallic nickel in removing sulphur compounds from naphthas in the form of vapor has been made. The experiments were carried out at 300° and 400°, and at atmospheric pressure. They have been made with naphtha vapor alone and with the addition of hydrogen. The absorption of sulphur from the naphthas in the liquid phase has been determined, and the corresponding behavior of an iron catalyst, very active in the synthesis of ammonia, has been studied.

The naphthas studied, obtained through the courtesy of J. B. Hill of the Atlantic Refining Co., had the following properties:

TABLE 1—PROPERTIES OF NAPHTHAS INVESTIGATED

Property—	Straightrun 1	Straightrun 2	Cracked 3
Per cent sulphur (raw)	0.410	0.278	0.357
Per cent sulphur (NaOH washed)	0.352	0.261	0.320
Hydrogen sulphide and free sulphur per cent—			
After 3 months' standing	0 030	0.043	0.035
After 8 months' standing	0.059	.....	.....
Mercaptan sulphur per cent—			
1. Method of Faragher, Morrell and Monroe	0.057	0.041	0 015
2. Application of method of Borgstrom and Reid	0.090	.....	.....
Doctor	Sour	Sour	Sour
Color	9 Saybolt	5 Saybolt	Yellow
Gravity A.P.I.	49.300	53.800	50.600
Assay distillation—			
Initial boiling point, °C.	48	42	30
25 per cent over at—°C.	116	110	100
75 per cent over at—°C.	212	180	190
Final boiling point, °C.	299	268	234

The curves of Figure 1 show typical results obtained when the naphthas studied were passed in vapor form over initially sulphur-free, active nickel catalysts at 300° C. The sulphur content of each successive 25 cc. volume of the condensed product is plotted against the total volume of naphtha passed over the catalyst from the start of the run. The curves for the different naphthas possess the same general characteristics. After contact with the catalyst the first portions of naphtha contained extremely little sulphur. The sulphur content of the product first undergoes a rapid increase, then a slower rise to a point, which may be called the "steady state," after which no further change occurs. Thereafter the sulphur content is independent of the volume of naptha which has been passed over the catalyst.

Sulphur Removed

The amounts of sulphur removed from each naphtha at the steady state are recorded in Table 2 which also shows results obtained when hydrogen is passed concurrently with the naphtha. It is evident that, while the curves of Figure 1 are of the same form, quantitatively, the amounts of sulphur removed at each stage are dependent on the naphtha in question. The reduction in sulphur content depends upon the naphtha. The differences exhibited by different naphthas are undoubtedly due to variation in the nature and reactivity of the sulphur compounds present.

When hydrogen was not added to the naphtha vapor, no hydrogen sulphide was evolved until the steady state was approached. At the sharp bend in the curves of Figure 1 its evolution commenced. It then increased slowly, finally reaching a constant rate. It is evident that in the initial stages the sulphur is being retained by the nickel catalyst. At the steady state there is presumably a definite relation of sulphide to free nickel surface.

With hydrogen present (600 mm. naphtha vapor to 160 mm. hydrogen) similar data were obtained as shown in Figure 2 and summarized in Table 2. The characteristics of the curves and the divergencies of naphtha behavior are as found in absence of hydrogen, but the amounts of sulphur removed at each stage were increased. The increased removal due to hydrogen also varied with the sample. Hydrogen sulphide evolution occurred from almost the beginning of the run. It increased somewhat as the steady state was approached, and then remained constant.

Effect of Temperature

Table 3 illustrates some data, obtained with a straightrun naphtha, concerning the effect of temperature on the process and also the effect of rerunning a condensate. It will be noted that the first passage is relatively the most efficient, and that eventually further material reduction of sulphur content is not attained by repassage under the given conditions. There is a small effect of temperature in increasing sulphur removal, and hydrogen increases removal of sulphur compounds not attacked in its absence.

The iron catalyst exhibits the same type of behavior as nickel, but is considerably less effective in its action than the latter. It reduced the sulphur content of naphtha 1 only to 0.338 per cent at the steady state in the one passage as compared with a reduction of 0.23 per cent with nickel.

That the differences in behavior with regard to sulphur removal encountered with the different naphthas are to be attributed to differences in the type and reactivity of the sulphur compounds present is evident from subsequent work. Pure sulphur compounds present individually in hydrocarbon materials have been studied in contact with nickel catalysts of the same type and activity as used in the work with the naphthas. Solutions of butyl mercaptan, isobutyl mercaptan, propyl sulphide, isopropyl sulphide and thiophene in sulphur-free naphthas[1] were chosen for study. The catalyst employed had been brought to a steady state with butyl mercaptan. Typical data with and without hydrogen are presented in Table 4.

Extent of Reaction

It is evident from the table that mercaptans and sulphides, but not thiophene, undergo a reaction evolving hydrogen sulphide in contact with a catalyst in the presence of naphtha vapor. It is also apparent that the extent to which such reaction occurs and, consequently, the amount of sulphur removed depends upon the type of sulphur compound involved. Under the given conditions the mercaptans were removed more readily than the sulphides, and thiophene was not affected. It is probable also that the various members of each class of sulphur compounds will also differ in the same manner. The results in the second half of the table show definitely that the addition of hydrogen to the naphtha vapor effects partial removal of thiophene in contact with the catalyst at the steady state. Increasing the ratio of hydrogen to naphtha increases the amount of sulphur removed. The addition of hydrogen effects the removal of a strikingly larger proportion of propyl sulphide sulphur than is effected when no hydrogen is added.

The efficiency of other catalyst materials is now being tested at atmospheric pressure, principally with 0.5 per cent solutions of thiophene in benzene as involving the most resistant type of sulphur compound. Some results with a catalyst prepared from a mixture of

TABLE 2—REMOVAL OF SULPHUR FROM NAPHTHAS IN VAPOR FORM AT 300° C. AT THE STEADY STATE BY A METALLIC NICKEL CATALYST WHICH WAS INITIALLY SULPHUR-FREE

		No hydrogen added				Hydrogen added				
Naphtha straight-run	Original sulphur content %	Sulphur content of product %	Reduction	Per cent of sulphur removed	Reaction to Doctor	Sulphur content of product %	Reduction	Per cent of sulphur removed	Reaction to Doctor	Removal due to hydrogen
1	0.410	0.22	0.190	46.3	Barely sour	0.14	0.270	65.9	Sweet	0.08
2	0.278	0.09	0.188	67.6	Sweet	0.08	0.198	71.2	Sweet	0.01
Cracked 3	0.357	0.31	0.047	13.1	Sour	0.27	0.087	24.3	Sweet	0.04

TABLE 3—ACTION OF CATALYST IN STEADY STATE IN REMOVING SULPHUR UNDER VARIOUS CONDITIONS

Naphtha 1

Run No.	H_2	Temperature, °C.	Sulphur content, % Before passage	Sulphur content, % Average after passage	No. of passages over catalyst
1	None	300	0.410	0.218	1
2	None	300	0.218	0.203	2
3	Added	300	0.229	0.220	2
4	Added	300	0.220	0.206	2
10	None	400	0.223	0.202	*2
11	Added	400	0.202	0.149	3
12	Added	400	0.410	0.213	1
13	Added	400	0.213	0.157	2
14	Added	400	0.157	0.133	3
15	Added	400	0.133	0.135	4

*First two passages without H_2.

TABLE 4—REMOVAL OF SULPHUR FROM NAPHTHA SOLUTIONS OF INDIVIDUAL SULPHUR COMPOUNDS AT 300° C. BY A NICKEL CATALYST IN STEADY STATE

Experiment No.	Sulphur compound in naphtha	Temperature (°C.)	Rate of flow (cc. liquid per hour)	H_2 flow (cc. per minute)	Sulphur content Initial	Sulphur content Final	Per cent reduction in sulphur
			No Added Hydrogen				
1	Butyl mercaptan	300	100	0	0.375	0.028	93
9	Butyl mercaptan	300	200	0	0.375	0.079	79
2	Propyl sulphide	300	100	0	0.393	0.309	21
3	Iso-butyl mercaptan	300	100	0	0.374	0.105	72
4	Thiophene	300	100	0	0.389	0.388	0
10	Iso-butyl sulphide	300	100	0	0.388	0.323	17
			Added Hydrogen				
5	Thiophene	300	100	100	0.389	0.360	7.4
6	Thiophene	300	25	200	0.389	0.322	17.2
7	Thiophene	400	100	100	0 349	0 345	11.3
8	Propyl sulphide	300	100	100	0 393	0.137	65.1
11	Thiophene	300	100	100	0.388	0.350	9.8

[1]The naphthas employed were from Cabin Creek crude and were supplied through the courtesy of C. R. Wagner of the Pure Oil Co.

molybdenum sulphide and cobalt oxide are shown in Table 5.

TABLE 5—REMOVAL OF THIOPHENE FROM BENZENE

temperature (degrees)	cc. per minute	Volume ratio of H_2:C_4H_4	Per cent of thiophene decomposed
305	50	100:85	24
353	40	100:60	36
405	40	100:60	44
352	95	100:25	22
403	95	100:15	26
450	95	100:25	42

With contact agents from a, molybdenum sulphide; and b, molybdenum oxide as starting materials, as much as 50 per cent removal of thiophene at 400° C. and atmospheric pressure in hydrogen-benzene vapor streams has been secured. Preliminary work at higher pressures is in progress and more extended studies with other catalysts and sulphur compounds.

The broad outlines of the problem are thus sketched in by the present data. Doubtless many of the details of the complete project are already to be found in the files of industrial-research organizations. Perhaps, too, the data should be supplemented by work on the interaction of sulphur compounds and steam in the presence of catalytic agents. That is, as yet, almost virgin territory. Sufficient has been indicated, however, to show that the problem of sulphur compounds in petroleum hydrocarbons can effectively be approached from the standpoint of the reactivity of such compounds in contact with catalytic agents.

LIST OF OFFICERS AND DIRECTORS OF THE A.P.I.

(Continued from Page 40)

Frank B. Fretter, National Refining Co., Cleveland, Ohio; G. R. Nutty, Gulf Refining Co., Pittsburgh, Pa.; W. E. Smith, Standard Oil Co. of Kentucky, Louisville, Ky.; and Charles L. Suhr, Pennzoil Co., Oil City, Pa.

Distribution Group—K. R. Kingsbury, Standard Oil Co., San Francisco, Calif.; E. T. Wilson, Denver, Colo.; L. L. Marcell, White Eagle Oil & Refining Co., Kansas City, Mo.; E. G. Seubert, Standard Oil Co. of Indiana, Chicago, Ill.; Henry M. Dawes, Pure Oil Co., Chicago, Ill.; E. W. Sinclair, Sinclair Refining Co., New York; and W. T. Holliday, Standard Oil Co. of Ohio, Cleveland, Ohio.

Transportation Group—J. Howard Pew, Sun Oil Co., Philadelphia, Pa.; C. H. Kountz, Prairie Pipe Line Co., Independence, Kans.; and L. J. Drake, Union Tank Car Co., Chicago, Ill.

Supply Group—John M. Crawford, Parkersburg Rig & Reel Co., Parkersburg, W. Va.

Natural Gas Group—Henry C. Morris, Dallas Gas Co., Dallas, Tex.

Natural Gasoline (Casinghead Group)—Edgar J. Marston, Texas Pacific Coal & Oil Co., Fort Worth, Tex.

Foreign Trade Group—(Europe) W. C. Teagle, Standard Oil Co. (New Jersey), New York; (Far East) Herbert L. Pratt, Standard Oil Co. of New York, New York; (Mexico and South America) C. M. Fuller, Richfield Oil Co., Los Angeles.

At Large Group—C. B. Ames, The Texas Company, New York; E. J. Bullock, Standard Oil Co. of Indiana, Chicago; W. N. Davis, Phillips Petroleum Co., Bartlesville; Henry L. Doherty, Henry L. Doherty & Co., New York; Jacob France, Mid-Continent Petroleum Corp., Tulsa; Wirt Franklin, Wirt Franklin Petroleum Co., Oklahoma City, Okla.; S. A. Guiberson, Guiberson Oil Investment Co., Los Angeles; R. C. Holmes, The Texas Company, New York; William F. Humphrey, Associated Oil Co., San Francisco; F. A. Leovy, Gulf Production Co., Pittsburgh, Pa.; J. F. Lucey, Lucey Petroleum Co., Dallas, Tex.; E. W. Marland, Ponca City, Okla.; D. J. Moran, Continental Oil Co., Ponca City, Okla.; Thomas A. O'Donnell, Los Angeles; Wallace E. Pratt, Humble Oil & Refining Co., Houston, Tex.; E. B. Reeser, Barnsdall Oil Co., Tulsa; W. G. Skelly, Skelly Oil Co., Tulsa; R. W. Stewart, Chicago Ill.; J. W. VanDyke, Atlantic Refining Co., Philadelphia, Pa.; and H. F. Sinclair, Sinclair Consolidated Oil Corp., New York.

Directors at Large Elected by the Board—E. R. Brown, Magnolia Petroleum Co., Dallas, Tex.; H. B. Earhart, White Star Refining Co., Chicago, Ill.; W. S. Fitzpatrick, Prairie Oil & Gas Co., Independence, Kans.; W. M. Keck, Superior Oil Co., Los Angeles, Calif.; W. M. Irish, Atlantic Refining Co., Philadelphia, Pa.; C. F. Meyer, Standard Oil Co. of New York, New York; E. T. Moore, Simms Petroleum Co., Dallas, Tex.; J. C. VanEck, Shell Union Oil Corp., New York; and George P. Whaley, Vacuum Oil Co., New York.

Division of Production

Chairman, Robert R. Penn, Penn Oil Co., Dallas, Tex.; vice chairman, W. R. Boyd, Jr., American Petroleum Institute, New York; secretary, C. A. Young, American Petroleum Institute, Dallas, Tex.; D. S. Bushnell, Northern Group of Pipe Lines, New York; O. D. Donnell, Ohio Oil Co., Findlay, Ohio; A. W. Peake, Standard Oil Co. of Indiana, Chicago; W. S. Fitzpatrick, Prairie Oil & Gas Co., Independence, Kans.; E. H. Salrin, Tide Water Oil Co., New York; Wirt Franklin, Wirt Franklin Oil Co., Ardmore, Okla.; H. M. Stalcup, Skelly Oil Co., Tulsa; F. A. Leovy, Gulf Production Co., Pittsburgh; M. E. Lombardi, Standard Oil Co. of California, San Francisco; Alvin Richards, Pure Oil Co., Tulsa; H. R. Macmillan, Macmillan Petroleum Corp., Los Angeles; E. A. Landreth, Landreth Production Co., Fort Worth; E. T. Moore, Simms Oil Co., Dallas; W. M. O'Connor, Atlantic Refining Co., Philadelphia; R. Ogarrio, The Texas Company, New York; H. H. Hill, Standard Oil Development Co., New York; Forrest D. Dorn, Forrest Oil Corp., Bradford, Pa.; H. R. Straight, Empire Companies, Bartlesville, Okla.; U. deB. Daly, Shell Petroleum Corp., St. Louis, Mo.; C. E. Crawley, Sinclair Consolidated Oil Corp., New York; W. N. Davis, Phillips Petroleum Co., Bartlesville, Okla.; W. S. Farish, Humble Oil & Refining Co., Houston; D. J. Moran, Continental Oil Co., Ponca City, Okla.; J. Edgar Pew, Sun Oil Co., Philadelphia, Pa.; and L. P. St. Clair, Union Oil Co. of California, Los Angeles.

National officers of Production Division are: J. R. McWilliams, Skelly Oil Co., chairman; Walter H. Meier, Atlantic Refining Co., vice chairman; C. A. Young, secretary. They are officers of the central committee on district activities. Officers on drilling and production are: H. H. Hill, Standard Development Co., New York, chairman; F. W. Lake, Union Oil Co. of California, vice chairman; C. A. Young, secretary.

Division of Refining

Chairman, R. C. Holmes, The Texas Company, New York; vice chairman, W. R. Boyd, Jr., American Petroleum Institute, New York; secretary, R. P. Anderson, American Petroleum Institute, New York; Lloyd Bayer, Associated Oil Co., San Francisco; Howard Bennette, Western Petroleum Refiners' Association, Tulsa; C. B. Buerger, Gulf Refining Co., Pittsburgh; E. M. Clark, Standard Oil Development Co., New York; O. L. Cordell, Phillips Petroleum Co., Tulsa; L. R. Crawford, Producers & Refiners Corp., Independence, Kans.; Fayette B. Dow, National Petroleum Association, Washington, D. C.; E. H. Eddleman, American Refining Co., Wichita Falls; John L. Gray, Deep Rock Oil Corp., Tulsa; C. W. Hadley, Vacuum Oil Co., New York; J. S. Harrison, Standard Oil Co. of Ohio, Cleveland, Ohio; R. E. Humphreys, Standard Oil Co. of Indiana, Chicago; E. W. Isom, Sinclair Refining Co., New York; G. Leigh-Jones, Shell Oil Co., San Francisco; K. G. Mackenzie, The Texas Company, New York; E. J. Marston, Texas Pacific Coal & Oil Co., Fort Worth; Walter Miller, Continental Oil Co., Ponca City, Okla.; W. L. Stewart, Jr., Union Oil Co., Los Angeles; Charles L. Suhr, Pennzoil Oil Corp., Oil City, Pa.; C. B. Watson, Pure Oil Co., Chicago; W. M. Irish, Atlantic Refining Co., Philadelphia; K. R. Kingsbury, Standard Oil Co. of California, San Francisco; C. F. Meyer, Standard Oil Co. of New York, New York; P. M. Miskell, Empire Companies, Tulsa; and J. Howard Pew, Sun Oil Co., Philadelphia.

Division of Marketing

Chairman, E. G. Seubert, Standard Oil Co. of Indiana, Chicago; vice chairman, W. R. Boyd, Jr., American Petroleum Institute, New York; secretary Paul E. Hadlick, American Petroleum Institute, New York; W. T. Atkins, Skelly Oil Co., Kansas City; J. W. Carnes, Sinclair Refining Co., New York; H. D. Collier, Standard Oil Co. of California, San Francisco; S. B. Eckert, Sun Oil Co., Philadelphia; M. G. Eitelman, Barnsdall Refining Co., Tulsa; W. H. Ferguson, Continental Oil Co., Denver; H. D. Frueauff, Cities Service Co., New York; C. N. Humphrey, Standard Oil Co. of Nebraska, Omaha, Neb.; Isaac H. Johnson, Johnson Oil & Refining Co., Chicago; R. D. Leonard, Atlantic Refining Co., Philadelphia; R. W. McDowell, Mid-Continent Petroleum Corp., Tulsa; R. D. Matthews, Union Oil Co. of California, Los Angeles; W. S. S. Rodgers, The Texas Company, New York; E. L. Shea, Tide Water Associated Oil Co., New York; C. G. Sheffield, Standard Oil Co. (New Jersey), New York; H. A. Trower, Phillips Petroleum Co., Bartlesville, Okla.; W. G. Violette, Standard Oil Co. of Kentucky, Louisville, Ky.; L. S. Wescoat, Pure Oil Co., Chicago; H. A. Wilkinson, Standard Oil Co. of New York, New York; A. C. Woodman, Richfield Oil Corp. of New York, New York; H. B. Earhart, White Star Refining Co., Detroit, Mich.; H. R. Gallagher, Shell Co. of California, San Francisco; W. T. Holliday, Standard Oil Co. of Ohio, Cleveland; Roy B. Jones, Panhandle Producing & Refining Co., Wichita Falls, Tex.; and G. R. Nutty, Gulf Refining Co., Pittsburgh.

INSTITUTE VIEWS ITS PROBLEMS SERIOUSLY

(Continued from Page 29)

going resolutions is not to be construed as an approval of the present rate of imports nor as an acceptance of the principle that domestic production should be limited by the amount of imports."

Tariff is Considered

The oil tariff discussion before the board of directors was held over without action for future consideration.

The board had under consideration a resolution offered by Wirt Franklin that the Institute endorse in principle the imposition of a tariff on crude oil and refined products imported into the United States.

The vote, as taken on Thursday morning, indicated that 26 directors were not present, 10 were present but not voting, 17 voted "aye" and 15 voted "no."

It was the consensus of opinion that the vote was insufficient to constitute the result as a test of opinion of the membership of the board, or to commit the Institute either for or against the resolution. It was then voted unanimously to reconsider the action indicated above and lay the resolution upon the table for action at some later date.

It was decided to hold the annual convention next year at the Stevens Hotel, Chicago, November 10, 11 and 12. Weather conditions in Chicago this year were so much better than when the convention was held there last December the action in moving the meeting to a date a month earlier than previously was shown to have been most wise.

Midyear Meetings

No dates were selected for the midyear meeting of the three divisions of the Institute—production, refining and marketing. Selection of the times and places for holding these meetings was left to the Institute and divisional officers. It was suggested one of these meetings be held in April, another in May and the third in June, such meetings to be held prior to the season of greatest activity of the division. Considerable talk was heard of holding the production meeting in California where the producers could obtain first-hand information on conditions there and see for themselves what would happen to the entire industry were proration to be lifted even to a slight extent. Colorado Springs also has many adherents because of the fact that place seems conducive to hard work, exceptional progress having been made at all previous meetings of the standardization and engineering branches held there. St. Louis is mentioned as a possible meeting place for the refining division and Chicago for the marketing division.

Henry M. Dawes, president of the Pure Oil Co., and retiring chairman of the Division of Marketing, created considerable discussion by his frank statement regarding the retail end of the gasoline business. He said in part: "So far as the strictly retail end of the business is concerned, we could do away with these irregularities which are making us the laughing stock of the world by the simple expedient of carrying on our business as one-price merchants, rather than like a lot of shysters with as many prices as customers. Nothing could be more clarifying than to draw the obvious parallels with other business. If, for example, one wished to buy half a dozen neckties at Marshall Field's, or perhaps a gross of neckties, one at a time, he would not expect to get a wholesale rate at this retail service station. Neither would he expect Marshall Field, in its retail store, to cut the price of a necktie to him if he said he could buy it at a lower figure at Mandel's. Why retail facilities for the distribution of gasoline should be used for wholesale distribution, or why all customers should not be offered our products at the same price at our service stations is difficult to understand and impossible to justify. Why should not all customers of a company in all of its retail stores or service stations be treated alike? The plain fact of the matter is that the business of marketing gasoline is only nominally controlled by the men at the head of the oil companies. The real men who make the price are the salesmen, and the more incompetent the salesman the larger control he has over policies. The president of an oil company cannot spend his time in the field. He is dependent for his information on the ex parte statements of his salesmen. The involved and sinister plots and schemes by which a competitor is alleged to have got business away from a poor salesman, but a good alibi artist, would do credit to Edgar Wallace. Their stories of the disreputable violations of decent ethics on the part of all competitors are exasperating enough to stimulate a rabbit to spit in the face of a bulldog, and result in kindly Christian gentlemen resorting to reprisals for injuries never done them.

"As far as the retail business is concerned, there is a very simple way to cut the Gordian Knot—to post one price in the service station and to adhere to it; to forget courtesy cards, charge accounts, commercial discounts, and all of the host of subterfuges now resorted to for the purpose of discriminating between customers and deceiving competitors. There is nothing visionary about this suggestion. Ninety-nine per cent of the marketers of the United States would favor it. Once developed that ninety-nine per cent did favor it, it would not be possible for the other 1 per cent to withstand the concentrated disapproval of the rest of the industry and the public, however large its gallonage might be.

"We are wandering around like a lot of wild men in a dark room, with knives in their hands. If we were to announce that we would adhere to one price and no discrimination at service stations, it would be like turning on a light. It would be a service to the marketers and the public of the United States.

"In establishing the code an evolutionary movement was put into effect and the outcome of this evolution cannot be in doubt. Evolutionary progress, however, is not necessarily at a fixed rate. It is only in a fixed direction. It is possible to move as fast in an evolutionary direction as in a revolutionary direction, and while men charged with large responsibility are under obligation to impose upon themselves great patience,

there is a point at which patience ceases to be a virtue. The industry has reached that stage in the conduct of its marketing. I believe we have already evolved to the point where the petroleum marketers of the United States are ready to declare that every man who enters a service station is entitled to the same price and service as every other man, without discrimination; that as retail merchants we should conduct one-price shops and do business in the open.

"We have this thing to do and we can do it either quickly or slowly. If we do it quickly, we must at least have the courage to declare ourselves. We can understand and the public can understand what we mean when we say we will establish one price in service stations. There is no reason why we should not lift our feet from the mire and our bodies above the fog and say what we mean and do now what we must do later. This is not a panacea but it will take us a long way toward the goal."

E. B. Reeser, of Tulsa, president of the Barnsdall Corp., was re-elected president of the Institute as had been expected. The wonderful record he has established during the two years he has been president of the Institute made his selection inevitable, especially in the face of the problems confronting the industry and in which he has shown an especial interest and activity.

COSDEN PREFERRED HOLDERS ORGANIZED

(Continued from Page 128)

common shares in first nine months of previous year.

Net income for quarter ended September 30 amounted to $2,290,887 after above charges, equal to 20 cents a share on 5,879,448 common shares, comparing with $4,866,672 or 62 cents a share on 5,632,829 shares in third quarter of 1929.

Tide Water Oil Co. and subsidiaries report for nine months ended September 30, 1930, net income of $3,988,263 after depreciation, depletion, federal taxes, etc., equivalent after dividend requirements on 5 per cent preferred stock to $1.48 a share on 2,191,821 no-par shares of common stock. This compares with $5,344,467 or $2.09 a share in first nine months of previous year.

Net income for September quarter was $1,149,411 after above charges, equal to 41 cents a share on common, comparing with $2,187,687 or 89 cents a share in preceding quarter and $2,433,814 or $1 a share in third quarter of 1929.

Associated Oil Co. and subsidiaries report for nine months ended September 30, 1930, net profit of $4,596,561 after interest, depreciation, depletion, federal taxes, cancelled leases, abandoned wells and other charges, equivalent to $2.01 a share (par $25) on 2,290,412 shares of stock. This compares with $5,312,223, or $2.32 a share, in first nine months of 1929.

Net profit for September quarter was $1,331,706 after above charges, equal to 58 cents a share, comparing with $1,524,835 or 66 cents a share in preceding quarter and $2,315,771 or $1.01 a share in third quarter of previous year.

Standard of California

Standard Oil Co. of California reports for quarter ended September 30, 1930, net income of $10,717,039 after interest, depreciation, depletion, federal taxes, etc., equal to 83 cents a share on 12,845,980 no-par shares of stock. This compares with $10,288,300 or 80 cents a share in the preceding quarter and $14,267,149 or $1.13 a share on 12,594,098 shares in third quarter of 1929.

Net income for nine months ended September 30, 1930, was $30,435,563 after above charges, equal to $2.37 a share on 12,845,980 shares, comparing with $34,375,480 or $2.73 a share on 12,594,098 shares in first nine months of preceding year.

The company in the future will issue earnings reports quartely. "This departure is made in recognition of what the directors believe to be a desire on the part of the company's stockholders for current information regarding the company's affairs," the announcement by Standard Oil of California in regard to adoption of the new policy stated.

Standard Oil of California has declared a stock dividend of 2 per cent and regular quarterly dividend of 62½ cents. Last year this time similar stock dividend was declared. Both dividends are payable December 15 to stock of record November 15.

Shell Union Oil

Quarter ended September 30: Consolidated net income, after all charges and reserves but before Federal taxes, $1,107,659, equivalent, after preferred dividends to about 4 cents a share on 13,070,561 common shares, against $2,874,031, or 18 cents a common share in preceding quarter and $9,172,746, or 66 cents a share in September quarter last year. Nine months ended September 30: Net income, $826,682, equivalent to $2.06 a share on 400,000 shares of 5½ per cent cumulative preferred stock, against $18,682,405, or $1.39 a common share last year.

Shell Pipe Line Corp. (wholly owned subsidiary of Shell Union Oil): Quarter ended September 30—Net income before federal taxes, $3,810,640, against $3,668,190 last year; surplus, $24,116,234, against $14,634,355.

United Carbon

United Carbon Co. and subsidiaries report for quarter ended September 30, 1930, net profit of $208,214 after depreciation, depletion, contingent reserves and federal taxes, equivalent, after dividend requirements on 18,978 shares of participating preferred stock, to 43 cents a share on 397,885 no-par shares of common stock, comparing with $204,929 or 43 cents a share on common in preceding quarter. In third quarter of previous year company reported net profit of $240,395, equal, under participating provisions of the shares, to $2.01 a share on 53,631 shares of preferred and 50 cents a share on 262,072 common shares.

For nine months ended September 30, net profit was $676,443 after above charges, equal, under the participating provisions of the shares, to $5.71 a share on 18,978 shares of participating preferred and $1.42 a share on 397,885 common shares. This compares with net profit in first nine months of 1929 of $1,079,186 or $9.05 a share on 53,631 preferred shares and $2.26 a share on 262,072 common shares.

Balance sheet as of September 30, 1930, shows current assets, including $1,209,120 cash, of $4,792,963 against current liabilities of $534,093.

Central Public Service

Central Public Service Corp. declared the regular quarterly dividends of 43¾ cents on the Class A stock, payable December 15 to stock of record November 25 and $1 on the $4 preferred, $1.50 on the $6 preferred and $1.75 on the $7 preferred, all preferred dividends payable January 1 to stock of record December 12. Class A stockholders have option of applying cash dividend to purchase of additional stock at rate of $17.50 a share.

United Light & Power

United Light & Power Co. and subsidiaries report for 12 months ended September 30, 1930, consolidated net income of $11,225,671 after depreciation, interest, taxes, subsidiary preferred dividends, etc., equivalent after preferred dividends to $2.30 a share on 3,356,677 average number of combined Class A and Class B common shares outstanding during the period. This compares with $8,080,685 or $1.90 a share on 3,209,810 average number of Class A and Class B common shares in preceding 12 months. Gross for the period totaled $95,961,810 against $93,508,460 in preceding 12 months.

NATURAL GASOLINE THE ONE BRIGHT SPOT

(Continued from Page 28)

again increased with many new inquiries made. Jobbers apparently did not close contracts for as large a share of their requirements this year as formerly because of the uncertainty of the market thus far and are now asking for quotations for the additional material. Price still seems to be the principal consideration, however, and no improvement in the market structure seems likely to develop immediately.

Gas Oil and Fuel Oil

The heavy gravity, low cold test grades of fuel oil were freely offered at prices below those of the past two weeks. The general slowing up of all industrial operations has been clearly indicated by the slow movement of these heavier grades of fuel. At the present low price of oil coal could be replaced by oil in a number of industries and show a saving in favor of oil, but there is no indication this change is coming about.

Lubricants and Wax

On November 13 a general reduction of 1 cent was posted on all grades of bright stock and fractional reductions were posted on the nonviscous grades of neutrals. Steam refined stocks showed no change in price but continued to be freely offered at last week's level. A more uniform quality of steam-refined stock is coming out of the new Oklahoma City refineries and there is a lesser tendency to quote "dump" prices in an effort to move it. In this respect the general Oklahoma market has been benefited but the entrance of this new group as competitors for the rather limited business promises to hold prices near their present level, at least until higher prices are posted on crude.

Wax quotations remained unchanged. Several of the larger manufacturers hold contracts which will take their output for the next 45 days, so there is little likelihood of lower prices being quoted immediately, but there is an equally strong likelihood that no attempt will be made to materially raise prices during this period, because of the reduced foreign and domestic demand.

SOUTHERN OKLAHOMA'S BIG ASPHALT DEPOSITS

NORMAN, Okla., Nov. 15.—Five general types of asphalt are found in Oklahoma, according to Dr. Charles N. Gould, director of the Oklahoma Geological Survey. These include lime asphalt, sand asphalt, pure asphalt, fossiliferous asphalt and liquid asphalt. The number of types is sometimes further subdivided on technical grounds, with different names for each type, while the sand and lime asphalt are sometimes grouped together as rock asphalt.

These various types of asphalt occur in vast deposits in southern and eastern Oklahoma, forming practically an unlimited supply should important commercial uses be developed for the material. This asphalt is generally believed to be the heavy residue of oil which has been permitted to escape and the lighter portions evaporated into the air. In some of the southeastern counties veins of pure asphalt, resembling coal, are found. During the early days, Doctor Gould stated, one of these veins was mined for fuel, but its use was soon discontinued because it made so hot a fire that stove grates would soon burn out.

In several localities across southern Oklahoma asphalt is found in ledges of sandstone or limestone, and is sometimes quarried for road material. In certain localities in the Arbuckle Mountains there are deposits of asphalt containing large quantities of small fossil shells, often beautifully colored. This asphalt is pure except for the fossils, which were imbedded and well preserved in the asphaltic material.

The liquid asphalt is obtained from a well drilled in the Arbuckle Mountains near Dougherty. This asphalt occurs as heavy oil, or liquid asphalt, of such consistency that it flows very slowly or not at all, depending on the temperature.

TEXAS PRORATION HEARING

FORT WORTH, Tex., Nov. 17.—Hearing will be held by the Railroad Commission of Texas at Austin at 10 o'clock Saturday, November 22, to determine whether the order entered into August 14, 1930, governing state-wide proration should be terminated at the end of the present 90 day period, be modified or continued.

E. O. SANGUINET WIDELY KNOWN AMONG OIL MEN

Eugene Oberly Sanguinet, vice president and sales manager of the William S. Barnickel Co., St. Louis, Mo., who died recently, had a wide acquaintance among oil men in the Mid-Continent and Gulf Coast Fields. Mr. Sanguinet, who was born in St. Louis 58 years ago, organized the 131st Field Artillery in Houston, Tex., and served overseas in the

E. O. Sanguinet

World War with the rank of major in the Thirty-sixth Division. He was a member of Battery A, Missouri National Guard, for 24 years and was a veteran of the Spanish-American War.

Ancestors of Major Sanguinet were among the signers of the document which officially established the "Village of St. Louis" when it was only a trading post. His great-grandmother was Mary Conde of the Grande Conde family, who married Charles Sanguinet, an early settler in St. Louis.

Besides his wife Major Sanguinet leaves seven brothers. Marshall R., L. Conde, Frank H., Benoist, William M., Alexis G., and M. Paul Sanguinet.

SHELL BUYS SAFETY BELTS

Parachute equipment manufacture is not confined to the aeronautical field alone, according to the Los Angeles, Calif., branch of the Irving Air Chute Co., which has received an order for 250 safety belts from the Shell Oil Co. for use by derrick workers in drilling wells. The novel web belts are designed and manufactured by Guy Ball, local manager of the Irving company. The webbing used in the new type oil workers' belts is the same as that employed in the manufacture of Irving air chute harnesses and is capable of withstanding a 4,000-pound pull, aside from having the advantage of being flexible and adaptable to the worker's use.

ARKANSAS GEOLOGICAL SURVEY

The Arkansas Geological Survey has recently issued a report of "The Geology of the Arkansas Paleozoic Area With Especial Reference to Oil and Gas Possibilities," prepared by Dr. Carey Croneis, assistant professor of geology of the University of Chicago. The area covered by the report includes approximately 25,000 square miles in the central, northern, western and northwestern parts of the State. The area is commonly known as the highland area of the State and is usually divided into three main physiographic regions, namely the Ozark Plateaus, the Arkansas River Valley and the Ouachita Mountains. This report is available through the Arkansas Geological Survey, Rooms 443-447 State Capitol, Little Rock, Ark., at $2.95 each plus 25 cents for postage and container.

JOINER POOL THOUGHT ERRATIC AND NOT MAJOR WOODBINE POOL

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Nov. 17.—The Joiner Pool, Rusk County, is being watched closely by all who are interested in the immediate area around the pool, and those who have been operating in East Central Texas, but the former opinion held by the geologists now seems to be correct, that this area is too far east in the basin for a major Woodbine pool, and that the sand will be found only in lenses, therefore producing erratically or lensing out and tests missing it. Arkansas Fuel Oil Co.'s No. 1 Worrell, southeast of the Joiner discovery, is now drilling below 3,692 feet in Georgetown, top of the Georgetown being 3,640 feet. The test may be plugged back to 3,548 feet where a foot of saturated sand was found, and this sand shot for a test. A little oil was bailed before drilling ahead. The well is now approximately 100 feet deeper than the discovery well which was completed at 3,594 feet. Six-inch casing was set at 3,540 feet.

Lauren L. Smith's No. 1 W. H. Worrel, in the Ximenes Survey, north of the discovery producer, is another test which looks disappointing as a drill stem test was made at 3,673 feet with no encouraging showing of oil found. It is now drilling below 3,680 feet in hard lime, and also looks as if it is out of the picture as a possible producer. This well and the Arkansas Fuel Oil Co.'s test defines the pool in two directions according to the present outlook.

H. L. Hunt's No. 1 Bradford, in the Ximenes Survey, south of the discovery, has about 150 feet more to go before production may be expected. It is now drilling below 3,447 feet in hard chalk. This test is about 700 feet due south of the Joiner discovery and is expected to make a producer, but nothing sure can be said about any of the tests in this enigmatical pool now until they have either been proved as producers or have been abandoned as failures. There are no failures yet, but it looks as if next week would see the plugging of at least two of them.

Stroube & Stroube's No. 1 Frederick, in the Ximenes Survey, a short distance north of the Joiner well, is another test which should be completed as a dry hole or producer within the next five or six days as it is now drilling chalk at 3,360 feet.

Frank Foster and Deep Rock Oil Co.'s No. 1 Ashby, in the Ximenes Survey, is now down 2,930 feet in broken chalk, and Tex-Lloyd Oil Corp.'s No. 1 Camp, in the Ximenes Survey, is another test in the pool which is not down far enough to give any indications one way or another, but another week should give the low down on both of these tests, and the pool.

C. M. Joiner's No. 3 Daisy Bradford, the discovery well of the pool, has been averaging 200 bbls. per day for the past week, and has produced a total of 6,695 bbls. up to November 13, the oil being sold to operators drilling offset wells, bringing $1.10 per barrel.

Humble Oil & Refining Co.'s No. 1 McGaffrey in the Blackfoot area, Anderson County, topped the broken Pecan Gap chalk and went into the hard Pecan Gap chalk at 2,932 feet. Base of the Pecan was 3,163 feet. It is now drilling at 3,276 feet in shale. This is one of the most interesting and closely watched wildcats in East Central Texas for the Blackfoot block, which is held by the Humble Oil & Refining Co., is considered as having a good chance for opening another good Woodbine Pool in this district.

Pure Oil Co.'s No. 1 I. W. Thompson, located on the west side of the Van Field, Van Zandt County, in a 95-acre tract, was completed as dry at a total depth of 3,313 feet this week, defining the field in that direction, and Kraft and Kelsey's No. 1 Enas, located in the J. Prado Survey in the southern part of the field, was another marker, cutting off production to the south. It was abandoned at a total depth of 3,003 feet.

There is but little work going on in the Van Pool at the present time, and no locations were announced during the week.

East Central Texas Production

Daily average production of the pools in the East Central Texas area for the week ending November 15 follows:

Boggy Creek	2,945
Cedar Creek	45
Currie	305
Hill County	30
Mexia	3,922
Minerva	545
Nigger Creek	190
Powell	5,328
Richland	150
Thrall	40
Van	27,409
Wortham	630
Total East Central Texas	41,529
Week ending November 8	42,468
Decrease	939

COMPLETIONS IN EAST CENTRAL TEXAS

Henderson County

E. L. Chapman and others' No. 2 Cade, dry and abandoned, total depth 944 feet.

Hunt County

Branson and others' No. 1 J. S. West, dry and abandoned, total depth 3,994 feet.

Marion County

W. L. Chew's No. 1 fee, dry and abandoned, total depth 3,328 feet.

Rusk County

C. M. Joiner's No. 3 Bradford, longest 24-hour gauge 458 bbls., oil sand broken 3,536-75 feet, initial production flowing by 12-hour heads through 2½-inch tubing 200 bbls., average one month after drilling in, total depth 3,592 feet.

Van Zandt County

D. H. Byrd's No. 1 W. H. Morris, Pecan Gap, 3,258-3,401 feet, dry and abandoned, total depth 4,737 feet. Kraft and Kelsey's No. 1 Evras, Pecan Gap 1,645-1,770 feet, dry and abandoned, total depth 3,003 feet. L. G. Priest's No. 1 Blanche Blewett, Pecan Gapp 2,796-2,957 feet, dry and abandoned, total depth 3,187 feet. Pure Oil Co.'s No. 1 Mertie Elliott, initial production 115 bbls. (estimated), total depth 2,933 feet. The Texas Company's No. 3 R. A. Tunnell, initial production 144 bbls. (estimated), total depth 2,946 feet. Pure Oil Co.'s No. 1 A. D. Clark, initial production estimated 144 bbls., total depth 2,931 feet. Pure Oil Co.'s No. 1 I. W. Thompson was dry and abandoned at 3,313 feet.

EAST CENTRAL TEXAS WILDCATS

Week Ending November 17

CHEROKEE COUNTY

Arkansas Fuel Oil Co.'s No. 1 Deaton, 330 ft. from S line, 300 ft. from E line, from 150-ac. tract in F. Calmen Heirs Sur., 3 miles SE of Jacksonville ..... Drlg. 3,959 ft.

DELTA COUNTY

D. S. Hood's No. 1 J. J. Balser, 185 feet from S and 580 feet W of Balser 40-acre tract in SE cor. T. B. Laddin Sur. ..... Drlg. 370 ft.

Worthington and Stedman's No. 1 W. H. Dejchett, 150 ft. from S and 776 ft. from W of 52-ac. tract, E. Chick Sur. ..... Spudded.

FANNIN COUNTY

E. A. Parsons et al's No. 1 Morgan in the English Sur., 3 miles NE of Savoy ..... Shut down 3,422 ft.

E. M. Rogers' No. 1 McSwain, 300 ft. S and E of Michael Daly Sur., in Juana Telgado Sur., 1¼ miles NE of Lomasco ..... Shut down 1,500 ft.

GREGG COUNTY

M. S. Hammond's No. 1 J. M. Hamby, 278 ft. from E line, 1,667 ft. S of Hamby 3,300-ac. tract, Martin Lant Sur. ..... Shut down 2,588 ft.

J. C. Ferrell's No. 1 J. K. Lathrop, 661 feet from N and 1,194 feet from W of 96-acre tract, William Robinson Sur. ..... Drlg. pit and material.

HENDERSON COUNTY

H. E. Ashburn et al's No. 1 T. E. Barry, center of Barry's 59-ac. tract in A. York Sur. ..... Coring 3,230 ft.

E. L. Chapman's No. 3 Cade, 1,560 ft. from N and 750 ft. W. J. B. Dorsey Sur. ..... Derrick.

Texas State Oil Co.'s No. 1 Skinner, 150 ft. from E and 150 ft. from S. J. Henshaw Sur. ..... Drlg. 3,750 ft.

HUNT COUNTY

Mamie S. Hammond's No. 1 W. H. Adams, center of survey, west of Branson Sur., J. A. McFarland Sur. .... Derrick blew down.

LAMAR COUNTY

Everett & Allen's No. 1 Guest, 250 ft. S and 2,046 ft. E of 100-ac. tract, L. Roberts Sur. ..... Spudded and shut down.

NAVARRO COUNTY

Young et al's No. 1 Farmer, 700 ft. from S and 400 ft. from E of 110-ac. farm in Finley Sur. ..... Shut down 960 ft.

POLK COUNTY

Sunshine Oil Co.'s No. 1 J. A. Collins, 313 ft. from NE 150 ft. from SE at right angles to line, A. Viesca Sur.. Shut down 3,000 ft.

RAINS COUNTY

Everett & Morrison's No. 1 Franklin, 640 ft. from S and E of 75-ac. tract in John Christian Sur., 6 miles SE of Emory ..... Spudded and shut down.

RED RIVER COUNTY

Buffington et al's No. 1 L. H. Moore, 160 ft. from S and 160 ft. from W of 100 acres, Daniel Cornelius Sur. ..... Spudded (rotary test).

Lloyd Oil Co.'s No. 1 R. H. Mace, 150 ft. from N and 150 ft. E of Mace 86-ac. tract, William Cullan Sur. ..... Drlg. 700 ft.

Droupleman and Bunely's No. 1 J. W. Cunningham, 250 ft. E and 250 ft. S of 180-ac. tract, S. B. Shi Sur. ..... Rig up.

RUSK COUNTY

Stroube and Stroube's No. 1 H. Frederick, 156 ft. from N and 500 ft. from W of SE of Frederick 195 acres, Juan Ximenes Sur. ..... Drlg. 3,359 ft.

E. L. Chapman's No. 1 A. P. Finney, 150 ft. from W of E 20 acres of 102-ac. tract, Isaac G. Parker Sur. ..... Derrick.

Dan Dillon et al's No. 1 W. H. Frederick (Jake), 150 ft. from E and 150 ft. from S of 50-ac. tract, Juan Ximenes Sur. ..... Derrick.

Goodman's No. 1 Oscar Jones, 250 ft. from W and 150 ft. from N of railroad, Brown Sur. ..... Rig.

Omaria Meredith's No. 1 Robertson, 150 ft. N along W line of George Guthrie Sur. from SE cor. and 150 ft. W of E line of Robertson 20-ac. tract, R. H. Pinney Sur. ..... Derrick (rotary).

A. A. Malone's No. 1 G. T. Moore, 150 ft. from E and 150 ft. from S, Juan Ximenes Sur. ..... Digging pit.

Arkansas Fuel Oil Co.'s No. 1 J. A. Worrell, 7,361 ft. from N and 5,361 ft. from E, Juan Ximenes Sur. .... Drlg. 3,692 ft.; may shoot show.

Frank Foster et al's No. 1 Ashby, 200 ft. from N and 250 ft. from E of 75-ac. tract, Juan Ximenes Sur. .... Drlg. 2,930 ft.

Alford et al's No. 1 W. L. Thrash, 1,103 ft. from N and 420 ft. from E of SE cor. of B. Smith Sur. ..... Derrick.

Mass et al's No. 1 Matthews, 3,244 ft. from N, 4,356 ft. from E, Dalines Cartinas Sur. ..... Derrick down.

Rosenfield's No. 1 L. A. Pinkston, 150 ft. from N and 262 ft. from W of Pinkston 77-ac. tract, Maria V. Pena Sur. ..... Shut down 2,015 ft.

Anderson et al's No. 1 G. T. Moore, 600 ft. from E along S line of G. T. Moore 100 acres and 580 ft. from S line of tract, Juan Ximenes Sur. ..... Derrick.

Anderson et al's No. 1 Bradford, 150 ft. from N and 150 ft. from E of lot No. 2, Juan Ximenes Sur... Drlg. 2,700 ft.

Lauren L. Smith's No. 1 W. H. Worrell, 333 ft. from N and 6,442 ft. from E of Juan Ximenes Sur. ..... Coring 3,592 ft.

Tex-Lloyd Oil Co.'s No. 1 Camp, 150 ft. from E and 150 ft. S of 5-ac. tract, Juan Ximenes Sur. ..... Drlg. 2,743 ft.

L. H. Hunt's No. 1 Bradford, 1,269 ft. W and 1,083 ft. S of SW cor. of J. T. Moore's 100 acres, Juan Ximenes Sur. ..... Drlg. 2,957 ft.

Bateman et al's No. 1 Lois Della Crim, 3,088 ft. W along N line of survey of NE cor. and 400 ft. S at right angles to N line of survey, E. G. Serien Sur. ..... Shut down 1,653 ft.

SMITH COUNTY

Owens & Sloan Oil Co.'s No. 1 Stearns, 846 ft. along W lines of John Waller Sur. from NE cor. of J. O. Dillard Sur., and 80 ft. E at right angles to W line of J. Waller Sur. ..... Drlg. 3,460 ft.

Sun Oil Co.'s No. 1 D. McGehee, 500 ft. W and 250 ft. S of SW cor. of Mrs. Julia Phillips 55-ac. tract, Thomas Quevado Sur. ..... Drlg. 2,291 ft.

Thayer & Rogers' No. 1 Willingham, 150 ft. N and W of 14.5-ac. tract, Jacob Hernin Sur. ..... Drlg. 1,825 ft.

Winona O. & G. Co.'s No. 1 Freeman, 150 ft. from S, W of 39-ac. tract in A. J. Legrone Sur., 4 miles SE of Winona ..... Shut down 3,529 ft.

TITUS COUNTY

Deep Rock Oil Co.'s No. 1 Ed McElroy, C of 100 acres, K. Lewis Sur. ..... Drlg. 1,650 ft.

VAN ZANDT COUNTY

L. R. Barton's No. 1 Wamble, 300 ft. from S and W of 100-ac. tract in Pleasant Young Sur. ..... Derrick.

Cranfill & Germany's No. 1 Swain, 137 ft. N and 50 ft. from W of excess strip on W side of O. L. and L. L. Swain farm ..... Shut down 14 ft.

T. Daniels' No. 1 Fannie Cumbine, 185 ft. S and 175 ft. E of NW cor. 156-ac. tract, John Wright Sur. ..... Temporarily abnd.

Dennis Oil Co.'s No. 1 C. W. Morris, 100 ft. from N and 300 ft. from E lines of Morris 160-ac. tract in C. L. Morris Sur., 5 miles SE of Ben Wheeler ..... Temporarily abnd.

Hartt Oil Co.'s No. 1 Dr. L. M. Cox and A. C. Night Sur., 1,785 ft. N of S line and 524 ft. E of W line .... Shut down 200 ft.

Neil McMehory's No. 1 R. V. Murphy, 150 ft. from N and 150 ft. W of survey, H. Bailey Sur. ..... Rig up.

Humble Oil & Ref. Co.'s No. 1 A. J. Fowler, 150 ft. from S and E of farm, John Walling Sur. ..... Top Pecan Gap 1,815 ft.; base 2,016 ft.; top second chalk 2,276 ft.; base 2,449 ft.; top Woodbine 2,529 ft.; to set csg.

Humble Oil & Ref. Co.'s No. 5 R. S. Blake, 150 ft. from N and 150 feet from E of SW cor. of Mrs. E. E. Carroll farm, John Walling Sur. ..... Location.

Humble Oil & Ref. Co.'s No. 6 R. S. Blake, 150 ft. from N and 150 ft. from W of SW cor. of Mrs. E. E. Carroll farm, elevation 485 ft.; John Walling Sur. ..... Location.

J. C. Fare's No. 1 P. S. Hand, C of Hand's 50-ac. tract, William Shuman Sur. ..... Set surface csg. 174 ft.

Humble Oil & Ref. Co.'s No. 2 Sanger, 506 ft. from N and 200 ft. from W, John Walling Sur. ..... Drlg. 350 ft.

Pure Oil Co.'s No. 2 A. W. Ellison, 200 ft. N of S line and 225 ft. W of E line of lease, James Rase Sur. ..... Drlg. 2,522 ft.

Pure Oil Co.'s No. 2 A. D. Clark, 350 ft. NW of S cor. of Mund Gross Sur., and 170 ft. SW of NW line of lease in J. Prado Sur. ..... Cement setting 305 ft.

Pure Oil Co.'s No. 4 N. E. Clark, 109 ft. W of W line of A. D. Clark 17-ac. lease, and 645 ft. S of N line, A. H. Wiley Sur. ..... Rigging up.
Pure Oil Co.'s No. 2 F. B. Smith, 139 ft. E of W line and 157 ft. N of S line of lease, in John Walling Sur. ..... Drlg. 1,595 ft.
Pure Oil Co.'s No. 3 A. D. Clark, 203 ft. from N of S line and 110 ft. W of E line of lease, John Walling Sur. ..... Cement setting 305 ft.
Pure Oil Co.'s No. 2 J. T. Taylor, 202 ft. from W of E line and 150 ft. from S of N line, John Walling Sur. ..... Drlg. 1,602 ft.
Pure Oil Co.'s No. 1 L. A. Smith, 150 ft. from N of S line and 139 ft. W of E line of lease, John Walling Sur. ..... Cemented 6⅝-in. csg. 2,640 ft.
H. Helms et al's No. 1 Bogue, 647 ft. W and 155 ft. S of SE cor. of J. M. Brown 70-ac. in Marshall University Sur., SE of Van ..... Shut down 2,212 ft.
B. P. Hervey's No. 1 Foster & Smith, 150 ft. S and 150 ft. W of 104-ac. tract, Margaret Neal Sur. ..... Shut down 4,601 ft.
Howard & Dooley's No. 1 Elliott 188-ac. tract in W. H. Bundy Sur. ..... Derrick.
Humble Oil & Ref. Co.'s No. 1 L. A. Dowdle, 1,027 ft. N of S line and 150 ft. E of W line, William Daniel Sur. Temp. abnd. 2,937 ft.
Imperator Oil Co.'s No. 1 G. J. Luther, in SW cor. G. J. Luther 32-ac. tract ..... Plug; T. D. 3,022 ft.; will plug back; showed salt water.
Imperator Oil Co.'s No. 2 G. W. Carter, 175 ft. from S and 35 ft. from W of G. W. Carter 171-ac. tract, William Daniel Sur. ..... Shut down.
Jenkins et al's No. 1 V. T. Davis, SE cor. of 139.8-ac. tract, Nacogdoches County School Land ..... Shut down 3,031 ft.
Pure Oil Co.'s No. 2 O. L. Swain, 200 ft. N of S line and 350 ft. E of W line of lease in John Walling Sur. ..... Cement setting 2,301 ft.
Pure Oil Co.'s No. 3 W. F. Swain, 250 ft. N of S line and 200 ft. E of W line in John Walling Sur. ..... Cement setting 2,706 ft.
Pure Oil Co.'s No. 2 Mary P. Neills 100-ac. tract, 225 ft. E of W line and 658 ft. S of N line, James Rose Sur. ..... Drlg. 2,573 ft.
Pure Oil Co.'s No. 1 H. C. Gilbert 62-ac. tract, 250 ft. W of E line and 250 ft. S of N line, Mund Gross Sur. ..... Drlg. 1,725 ft.
Pure Oil Co.'s No. 1 Sam Allen, 825 ft. E of W line and midway between N and S line of lease, J. Prado Sur. ..... Cement setting 2,841 ft (rotary).
Pure Oil Co.'s No. 1 R. E. Cade, 225 ft. S of N line and 623 ft. E of W line of lease in A. McPhail Sur. ..... Drlg. 2,900 ft. (rotary).
Pure Oil Co.'s No. 1 A. J. Tunnell, 250 ft. S of N line and 200 ft. W of E line of lease in Mund Gross Sur. ..... Coring 3,764 ft. (rotary).
Pure Oil Co.'s No. 1 Davis, 127 ft. from S and 200 ft. from W of 139-ac. tract, Nacogdoches County School Land ..... Derrick standing.
The Texas Company's No. 4 R. A. Tunnell, 335 ft. E of most easterly W line and 217 ft. S of N line of lease, John Walling Sur. ..... Drlg. 170 ft.
Van Oil Association's No. 1 Tankersley, 200 ft. from E and 1,000 ft. from S of farm, L. Landers Sur. .... Rig up.
Vitek Oil Co.'s No. 1 Smith, 150 ft. S and 15 ft. from W of L. A. Smith 40-ac. farm in John Walling Sur... Derrick.
The Texas Company's No. 2 R. A. Tunnell 100 acres, 250 ft. S of N line and 200 ft. W of E line, John Walling Sur. ..... Cement setting 2,800 ft.
Maud Powell's No. 1 Killam, 1,350 ft. from NW, along SW line from most S cor. of 52-ac. tract and 425 ft. NE to SW line, Jessie Russell Sur. ..... Shut down 4,046 ft.

WOOD COUNTY

Loche & Clark's No. 1 A. C. Pick, 165 ft. S of NE cor. G. C. Reeves 25-ac. tract, Daniel Fuller Sur. .... Shut down 997 ft.

IRAQ PIPE LINE WILL OPEN A NEW SUPPLY

(Continued from Page 29)

Under the terms of the concession held by the company it has been allotted 24 rectangular plots of 8 square miles each to be selected by prospecting remaining petroliferous lands to be sold at public auction, the company taking the proceeds and being authorized to tender itself for additional plots, the Iraq government receiving royalties on all production.

Two Sea Terminals

The projected pipe line has been a subject of discussion for several years and not until recently have the owners come to an agreement as to the route. It has been agreed that the pipe line at some point in its course will be divided into two branches, one going to Haifa, Palestine, a British controlled port, and the other to Tripoli (Tarabulis), in Syria, which is in the French mandate. The two cities are about 120 miles apart, and both are Mediterranean seaports.

The approximate location chosen for pipe line from Mesopotamia to the sea.

The Mosul oil fields in Mesopotamia have been explored sufficiently to uncover an already large potential production, said to be at least 100,000 bbls. a day. The test wells are shut in and protected from vandals by heavy concrete covers over the well heads.

The British and American interest in the company have not wanted to build the pipe line at this time because of the already large over supply of crude and refined products, but France has no crude oil and no other oil than it imports and is desirous of supplying its own needs from fields of its own nationals. France expects that it can eventually obtain all the oil it needs from the Mesopotamian fields and even has ambitions to enter the export field. This desire for its own oil supply has been back of French insistence that the pipe line be built and that the French have their own sea terminal.

Reports from Europe are to the effect that there is another reason for the decision to build the line, that being that the King Feisal intends to grant a concession to British, German, Swiss and Italian capitalists on condition that they construct an adequate pipe line outlet.

After leaving Tulsa Mr. Austin stopped at St. Louis where his associates in the Ajax Pipe Line Co. gave him a farewell banquet. The Ajax Pipe Line will be ready to run crude oil about December 1 and should be fully prepared for a maximum business before the first of the year.

MEXICAN OIL TAXES

Mexican oil production and export taxes are less for November than those for October, with a tax of 13.259 cents a barrel on light crude, 7.583 cents on heavy crude and 11.661 cents on fuel oil. Combined production and export taxes are 21.207 cents a barrel on light crude, 12.511 cents on heavy crude and 18.021 cents on fuel oil.

RESEARCH REPORT ON PEACE RIVER PROSPECT

A report, compiled for the Research Council of Alberta by Ralph L. Rutherford in connection with water powers in the Peace River area of northern Alberta, refers incidentally to the potential oil resources of that district in part as follows:

"Many of the inhabitants hold the belief that valuable reserves of oil occur in the Peace River country. It is evident that such beliefs held here as elsewhere, are founded on hope rather than on definite evidence. Lithologically some of the underlying formations are suitable for the accumulation of oil, and in fact, the sequence of strata may be said to be ideal in this respect. Structural conditions appear to be favorable in places, but as in other areas that have been tested, all that is needed is the oil. This area has not been tested as to its oil and gas possibilities, although tests have been made in areas somewhat removed where lithological and structural conditions are the same or similar.

"Two wells have been drilled near the north edge of the area, at the town of Peace River. Drilling commenced near the top of the Peace River formation and passed through the underlying lower Cretaceous formations into the Palaeozoic formations below. Several other wells have been drilled along the valley of the Peace. These are distributed at varying intervals, over a distance of 30 to 40 miles north from Peace River. One of the wells at Peace River, known as Victory Oil Co.'s No. 1, is situated at the west end of the railway bridge, and is reported to have reached a depth of 1,807 feet. At present a small quantity of gas and a strong flow of sulphurous salt water are escaping from the hole. Another well on the east side of the river just north of the town is reported to have reached a depth of 1,162 feet.

"Heavy oil was encountered in some wells drilled north of this area, but none proved commercially productive. In some of these wells, oil-bearing sands were struck in the basal portion of the Loon River formation, which is in part a marine shale formation underlying the Peace River formation. The structure along the Peace north of Peace River is not pronounced, but is in general anticlinal.

Only Part Tested

"To date only the lower part of the lower Cretaceous formations have been tested in an area to the north of Peace River. There are more pronounced dips to the strata at several places within the area mapped than along the Peace to the north where the drilling has been done. The maximum dip to the south is 50 to 60 feet to the mile, and occurs within an east-west belt across the southern part of the area mapped. The structures evident in upper Cretaceous beds at the surface are not necessarily superimposed on similar structures at depth, yet it is likely that the maximum dips at depths are to a certain extent coincident in position with similar conditions at the surface.

"It is not the purpose here to indicate favorable drilling sites or to recommend drilling, but in time there will likely be more tests for oil and gas made in this general area. If such are to be made, the writer feels that the more favorable structural conditions prevail south of the Peace between Watino and Spirit River.

"There has been some drilling done in other areas somewhat removed from this, where a greater thickness of Cretaceous has been drilled through than by the wells at Peace River and to the north. A well was drilled at High Prairie to a reported depth of 2,205 feet. It commenced drilling in the upper part of the Smoky River shales. Two wells have been drilled near the northeast corner of Lesser Slave Lake. The deepest of these, International Oils' No. 2, was drilled to a depth of 3,105 feet. Both have been abandoned without obtaining satisfactory results.

"Two wells have been drilled in the valley of Pouce Coupe River, north and east of Rolla, British Columbia. One was drilled in Section 26-80-13w6, by Imperial Oil, Ltd. According to Dr. G. S. Hume this well was drilled to a depth of 3,057 feet and commenced in the St. John shales. A strong gas flow, estimated at 10,000,000 feet a day, was struck at 1,675 feet, and other flows were encountered at greater depths. A second well was drilled farther south in the Pouce Coupe Valley. Its location is NW Section 19-79-13w6, at the mouth of Saskatoon Creek. The writer has not been able to obtain any definite information as to its depth. It started near the base of the Smoky River shales or in the upper part of the Dunvegan formation and at present is a flowing water well.

"Thus, none of the tests made in the Peace River country have proven commercially productive, although oil and gas has been struck in some wells. Most of the wells north of the Peace River were drilled with a view to testing the lower Paleozoic formations at depth. The lower Cretaceous have been penetrated on the Pouce Coupe River at the west side of Alberta, and similar horizons have been drilled through at High Prairie and at the east end of Lesser Slave Lake. The results of such drilling do not give very favorable indications as to possibilities within the area mapped, yet it is the writer's opinion that more favorable structural conditions prevail in parts of this area than those already tested.

"It is not recommended that further expenditures be made at present to test the oil possibilities within this area, or those adjacent, but since such expenditures are frequently made irrespective of recommendations, it is felt that the above considerations may direct any such action to locations that appear to the writer to be the more favorable."

HELIUM FOUND IN ESTHONIA

NEW YORK, Nov. 17.—Helium gas has been discovered in Esthonia, natural gas from oil shale deposits of Tallin, Esthonia, having been found to contain 3 per cent helium. German interests, it is reported, have already entered into negotiations with the Esthonian government.

OIL SHALE LAW

A suggestion that Congress might define more explicitly by law the statutes governing the oil shale reserves has been made by Secretary of the Interior Ray Lyman Wilbur in a letter sent to all members of both the Senate and House Public Lands Committee.

SUMMARY OF STATEMENTS MADE NOVEMBER 10, 1930, OF VARIOUS PIPE LINES FOR MONTH ENDING OCTOBER 31, 1930

	Gross stocks	Runs from wells	Other receipts	Regular deliveries	Other deliveries
Nat. Transit	830,161.58	135,934.22	922,748.83	479,245.86	493,542.90
S. W. Pa. P. L.	543,783.65	82,961.29	443,217.76	187,406.27	328,352.98
Eureka P. L.	1,483,216.69	329,128.04	348,329.25	247,221.25	432,773.24
Buckeye P. L. (Macksburg)	656,581.88	354,552.32	68,597.44	217,217.64	204,577.32
Buckeye P. L. (Lima, etc.)	4,992,794.24	94,154.99	1,603,433.15	1,039,180.06	684,888.38
Buckeye P. L. (Cleveland)	65,770.92	12,508.84	136,967.44	2,200.10	147,775.34
Indiana P. L.	795,428.98	4,483.25	1,506,700.67	548,201.97	926,099.54
Cumberland P. L.	521,527.42	172,782.21	1,160.38	126,573.84	71,065.07
Southern P. L.	265,170.30	.....	233,503.94	69,576.30	189,530.76
Bradford Trans.	235,074.97	344,649.24	.....	263,300.96	.....
N. Y. Transit	178,474.41	35,614.60	208,612.56	169,187.25	35,848.48
Northern P. L.	459,246.38	.....	399,076.58	80,085.21	340,303.24
Tide Water Pipe	811,218.64	27,863.60	.....	574,109.31	.....
Tuscarora Dev.	104,667.41	.....	.....	285,731.78	.....
Total October 31	11,943,390.37	1,594,632.60	5,872,348.00	4,279,227.80	3,854,757.65
Total September 30	12,203,898.52	1,502,621.29	7,266,826.47	5,263,400.94	4,463,264.14
Difference	260,508.15	92,011.31	1,394,478.47	984,173.14	598,006.49

OWNERSHIP BY PUBLIC WILL PREVENT MONOPOLY

NEW YORK, Nov. 17.—Business in the United States is moving more and more toward public ownership as distinguished from government ownership, Walter C. Teagle, president of the Standard Oil Co. of New Jersey, said in an address broadcast over WJZ.

"The executives of industry are becoming the salaried custodians of the invested savings of the American people," he said. "It is well to bear this in mind for it means that anything affecting large corporations also affect that large part of our population which owns them."

Mr. Teagle said that although the American people are regulating big business, the idea persists that a corporation is an octopus—the creature of a small group of selfish men who are intent on wringing the largest possible profit from the public.

"Monopoly becomes impossible as public ownership of industry expands," he continued. "The managers of industry realize that no corporation can prosper except by giving outstanding service."

Late Fields

(Continued from Page 40)

Weed Patch area of Kern County, even though drilling operations will be retarded, makes it imperative for operators to continue aggressive curtailment indefinitely. The production situation in California may possibly be further complicated as deep zone exploration in the Huntington Beach Field of Los Angeles Basin may result in the discovery of a new deep horizon. Geological opinion is divided as to this possibility but it might be well to watch this deep drilling because it may mean collapse of the Pacific Coast price structure and result in disruption of the existing statewide curtailment program. No reliable information is available as to the present status of the two deep tests under way, the formation in each instance being logged as brown shale. One of these deep tests, No. 17 McCasline of the Transport Oil Co., however, is known to have required the use of a heavily fortified drilling mud as a precautionary measure. This well is down 6,815 feet, while the Superior Oil Co.'s No. 1 fee is rotating at 7,075 feet. Both projects are located in the town lot section east of the Barley Flats area which parallels and adjoins the ocean front. This section of the Huntington Beach Field has never had a real deep test notwithstanding it presents the best prospects for success. Several deep tests have been started from time to time but in every case up to the present operators have yielded to pressure and suspended operations.

KANSAS

Lario Oil & Gas Co.'s No. 1 Miller, SE cor. Section 1-20-2w, on the east edge of the Ritz Pool, flowed 1,193 bbls. of oil, of which 9 per cent was water in 24 hours from the chat at a total depth of 2,973 feet.

Mid-Kansas Oil & Gas Co.'s No. 1 Garrett, SW cor. NE Section 30-19-1w, McPherson County, new deep sand discovery well, near the Ritz Pool, swabbed and flowed 3,115 bbls. the first 24 hours and increased its production the second 24 hours to 3,327 bbls. from the Viola lime at 3,407-14 feet.

Another well was completed in the Schurr Pool in Rice County, the Producers & Refiners Corp.'s No. 2 Thompson, SW cor. SE NW Section 21-20-10w. It is estimated to be a 1,000-bbl. well. It first made 15 bbls. an hour from the Silicious lime at 3,327-32 feet, and increased its flow when drilled, averaging 40 bbls. an hour from a total depth of 3,344 feet.

The semiwildcat test of the Noble Drilling Co. and others' No. 1 Zarger, NW cor. NE SE Section 16-21-3w, McPherson County, had a showing of oil in the Viola lime topped at 3,380 feet. The casing is being underreamed and it will also be cemented before this test is drilled into the pay horizon.

In Gove County Atlantic Oil Producing Co. and T. C. Johnson's No. 1 Wright, SE cor. NE Section 11-12-27w, was drilling at 3,300 feet, and some express the opinion the lime was thinning. Another wildcat test in the same county is Valerius & Boucher Oil Co.'s No. 1 Todd, NW cor. Section 24-13-27w, which is shut down at 4,465 feet with a showing of water. The rig was pulled in when the crew attempted to pull the frozen 6-inch casing.

Jasper & Beschka's No. 1 Cupp, SW cor. NE Section 22-18-9w, Rice County wildcat, was a disappointment when it found sulphur water at 3,315 feet. It is located about 2½ miles northeast of the recent wildcat discovery well of the Shell Petroleum Corp. and others' No. 1 Ploog, which is estimated to be a 2,000-bbl. well.

OKLAHOMA

The actual production from the Oklahoma City Field for the seven days ending November 18 was as follows:

Date—	Bbls.	No. prod.	Comp. wells
November 12	98,493	68	648
November 13	125,586	63	649
November 14	75,200	64	649
November 15	88,667	71	650
November 16	67,732	59	650
November 17	74,407	51	652
November 18	90,828	81	652

Mid-Kansas Oil & Gas Co.'s No. 1 Ball, NW cor. NE, Section 19-12-1w, an offset to the discovery well in the Nicoma Park district, east of the Oklahoma City Pool, was drilling deeper at 6,227 feet, after bailing down and testing for production at 6,171 feet, where a small showing of oil and gas was found. It is expected to be drilled a few feet deeper and again tested.

The south end of the Oklahoma City Field has another setback when the Continental Oil Co.'s No. 4 Sudik, NE cor., Section 6-10-2w, Cleveland County, found water at 6,955 feet and will be abandoned. The hole had about 2,900 feet of water when the bailing stopped. It is the fourth test to be abandoned in the south end of the field.

Empire Oil & Refining Co.'s No. 1 Gustin, SW cor. NE Section 1-11-3w, the most northeasterly test in the Oklahoma City Field, swabbed 90 bbls. in 22 hours after a 40-quart shot at 6,467-6,561 feet. It is shut down until the No. 2 Gustin is completed.

Amerada Petroleum Corp.'s No. 2 Tiger, SW cor. SE NW Section 3-8-5, in the north extension to the Carr City Pool, in Seminole County, has been completed for 2,995 bbls. in 24 hours from the Hunton lime at 3,900-38 feet. The production on November 18 was 2,445 bbls. The company will produce the well until the allowed production for the month has been made, and then it will be shut in.

Deep Rock Oil & Refining Co.'s No. 4, SE cor. SW NE Section 23-6-3, Wanette Pool, in Pottawatomie County, flowed 2,162 bbls. in 19 hours from sand at 3,380-3,405 feet.

The wildcat test of J. V. Bailey and others' No. 1 Acre, SW cor. NE Section 14-24-11w, Alfalfa County, has resumed operations and it is expected to be completed to the contract depth of 5,500 feet. The test was shut down at 4,660 feet nearly a year ago in the Tonkawa series with a showing of gas. Drilling will be resumed with standard tools.

APPLIANCE SALESMEN IN DALLAS CONFERENCE

DALLAS, Tex., Nov. 15.—Selling gas in the Southwest with the best service to the consumer and consequent profit for the gas companies were discussed at a meeting of more than 100 representatives of the industry in Dallas this week. It was sponsored by the commercial section of the American Gas Association.

H. C. Davidson of New York answered criticism against gas companies and other utilities for merchandising appliances, which some consider is competition with the regular appliance merchants. A law enacted last year in Wisconsin completely divorces appliance sales from gas or electric operations and was put into effect this year, preventing gas or electric companies from selling their appliances. Mr. Davidson argued that appliance sales by gas companies are promotional, tending to increase uses of gas, and in fields which the ordinary appliance dealer might not enter.

"The appliance sales of the utilities," he said, "are looked upon as merchandise sales that might otherwise have been made by the trade or local merchant. The agitators ignore the fact that the larger part of the effort and expense of the utilities is directed to extending the market for appliances into fields in which the plumber or dealer could not possibly afford to pioneer."

H. E. Meade of New Orleans discussed "Class Rates for Promoting Commercial Sales," in which he urged the gas companies to learn from the experience by the electric companies.

C. K. Patton of Dallas, discussing "Selling House Heating in the Southwest," urged more intensive sales efforts, co-operation with manufacturers of appliances and education of southwestern architects and builders in natural gas heating.

P. C. Tucker of Pine Bluff, Ark.; J. B. Allison of Salina, Kans., and N. A. Newton of Tulsa also delivered papers. Chester L. May of Dallas was chairman, with E. J. Stephany of Dallas, secretary of the natural gas department of the American Gas Association, assisting.

GULF COAST REFINERY PRICES ARE UNSETTLED

HOUSTON, Tex., Nov. 18.—Gulf Coast refinery markets were virtually unchanged the past week. Unsettled conditions continue. Fuel oil was freely offered and although there was little movement in bulk, sellers were maintaining a minimum of 65 cents. There has been no change in the bunker posting of $1 at Texas terminals in the face of the 90-cent Louisiana price. Some Texas terminals, however, are reported selling 10 cents under the posting.

Refiners also have not weakened on gas oil, which apparently is in a fairly firm position at 3¾ cents for 30-30 zero test material. No important sales have been made, with buyers trying to hold out for 3½ cents, but with the burner oil season ahead the sellers have more in their favor.

Pale and red oils may be slightly steadier in price although a wide margin of price quoting prevails from some sources. The volume of business is a little improved from some sources, but there is no prospect of a settled market for the time being.

CRUDE PRICE CUTS

Two independent refiners in the Mid-Continent cut crude oil prices in the past week. The Dale Oil & Refining Co. of Electra, Tex., posted the following prices effective on November 16: Below 36 gravity, 75 cents; 36-36.9 degrees, 79 cents, with a 4-cent differential for each degree upward to 40 degrees and over which is posted at 95 cents. On Monday, November 17, the Champlin Refining Co. of Enid, Okla., posted 32.9 degrees and below at 71 cents; 33 degrees, 73 cents, with a 2-cent differential for each degree upward to 40 degrees and above, which is posted at 87 cents.

The Joseph Seep Purchasing Agency reduced Pennsylvania grade crudes 15 cents in Pennsylvania, West Virginia and southeastern Ohio. The Tide Water Pipe Co. made a like reduction in the Allegany, N. Y., and Bradford, Pa., fields, and the Pure Oil Co. cut 15 cents per barrel in West Virginia. Continued overproduction of Pennsylvania grade oil is given as the cause.

FRENCH OIL CONSUMPTION

France consumes about 22,000,000 bbls. of petroleum products a year, nearly two-thirds of this amount being gasoline, and except for a domestic production of 525,000 bbls., the consumption figures represent imports, one-half of which came from the United States in 1929, according to a report from Consul Damon C. Woods, Paris.

REFINERIES OPERATING IN YUGOSLAVIA AREA

At last reports, there were only two petroleum refineries operating in Yugoslavia, one owned by the Standard Oil Co of Yugoslavia and the second to the Anglo-Yugoslav Co. A third company was reported contemplating the establishment of a plant in Yugoslavia, but, at last reports, nothing definite in that direction had developed.

The Standard Oil Co. of Yugoslavia, which has been operating a refining plant since April, 1928, has acquired and consolidated the Danica D.D.za Kemicne Proisvode (Danica Chemical Industry) The plant is situated on the right bank of the Save River at Bosanski Brod, with headquarters maintained at Belgrade. It occupies an area of some 65,000 square meters for the refinery and switches, and approximately 25,000 square meters for buildings and ground for expansion. It was constructed in 1893 and 1894. Branches are maintained at Zagreb, Novi Sad and Maribor, all in Yugoslavia.

Equipment is described by American Consul K. S. Patton at Belgrade as follows: "There are three crude stills internally fired (two flues), one of 70 to 80 metric tons capacity and two of 60 tons capacity, with two preheaters, and one new but not installed. The crude stills have a capacity of 2,500 to 3,500 tons of crude oil a month. Four horizontal shell stills are in operation, with a capacity of 20 tons, without vacuum dephlegmators; 10 receiving tanks have a capacity of 40 tons; five coke stills have a capacity of 15,000 liters; three high vacuum stills, constructed in 1922-1924, have a capacity of 30 tons.

There is one still with a capacity of 20 tons (Heckman Tower). Three agitators have capacities of 80, 30 and 10 tons, respectively.

Lubricating Equipment

The lubricating oil equipment was rebuilt in 1925; the capacity is 600 tons of lubricating oils a month. There are two agitators for acid with a capacity of 18 tons, two settling tanks, five alkali wash tanks with a capacity of 18 tons, and 12 tanks with a capacity of 40 tons for storage of various grades.

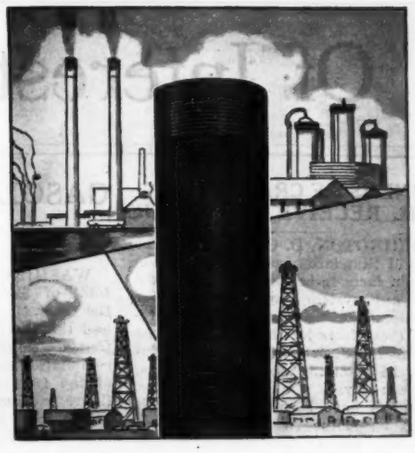
The grease plant has one kettle and one mixer, with a capacity of 30 tons a month. The axle grease plant has an annual capacity of 2,000 tons, actually treating approximately 1,000 tons yearly. The capacity of the wax plant is between 1,000 and 1,500 tons of wax a year. There is one ammonia compressor (55,000 caloric hours), one ammonia compressor (25,000 caloric hours) with pipe condensers, two refrigerators (chloracalcium, Neuman Porges) with a capacity of six tons; six filter presses with a capacity of 6.25 tons; two refrigerators with a capacity of 2.5 tons for warm pressing; two filter presses for warm pressing, and two chambers with 14 sweating plants with a capacity of 15 tons. The monthly capacity of the equipment for warm pressing amounts to 400 tons in winter and 200 in summer. For treating wax there is an agitator for acid with a capacity of five tons, another for alkali with a capacity of five tons, and a filter press with a capacity of three tons.

The candle factory equipment consists of 12 machines with an annual capacity of 800 to 1,000 tons. The can factory has a capacity up to 3,000 cans in 24 hours, soldering and filling. There are two barrel houses, fitted only to repair old barrels.

PRAIRIE-SINCLAIR DEAL OFF

Official announcement was made last week by officials of the Sinclair Consolidated Oil Corp. and the Prairie Oil & Gas Co. and Prairie Pipe Line Co. that negotiations looking toward a merger of these companies had been discontinued. It was intimated terms offered for the Prairie companies were not entirely satisfactory to certain interests of those companies. It is expected the Prairie will consider other companies which will provide an outlet for the crude oil it has in storage and produces.

Remember TONCAN FOR PERMANENCE



FOLLOW this prescription if you wish to avoid future worry about pipe. Make it your practice, particularly where service is severe, to specify Toncan Iron Pipe — the trouble-free pipe.

It begins to save trouble with its installation, for it is easy to thread or flange or bend. But the greatest benefit of Toncan Pipe can only be realized as the years go by without costly repairs and upkeep.

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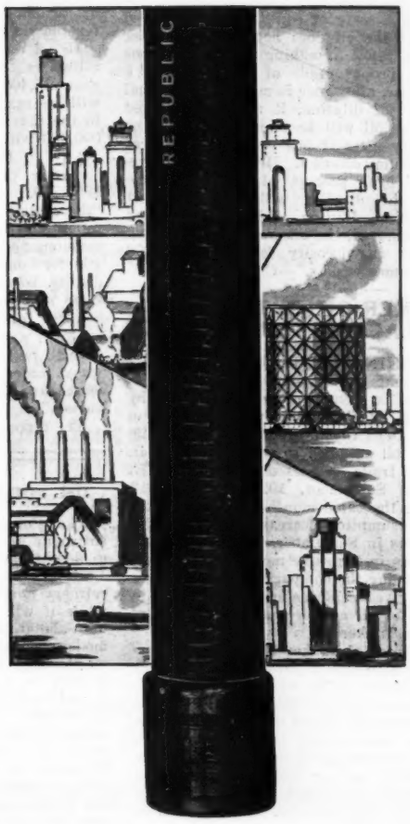
Send for the "Toncan Book." It contains full details of the story of Toncan Iron Pipe, its metallurgy, manufacture, tests and uses.



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Of Interest to Sales Departments

REFINERS OF CRANKCASE OIL RECEIVE REMINDER

WASHINGTON, D. C., Nov. 17.—The Bureau of Standards has called attention to certain facts to be kept in mind in designing any system for the refining of used automobile crankcase oil and a report of these facts has been made by the bureau to the Society of Automotive Engineers. In summing up its conclusions, the bureau says:

"Attempts have been made to use oil rectifiers on motor vehicles but at best they merely remove the diluent, or unburned portion of the fuel, and do not remove the dust and metal particles with which the oil becomes contaminated. Hence, the question of present interest is how to treat the used oil when drained from the vehicle.

The dust and metal particles may be removed by coagulation, settling, centrifuging and other methods, but it has been found unnecessary to remove the diluent for the following reasons:

"After some 200 miles of vehicle operation a state of equilibrium is reached so that the oil does not become further diluted. Since in making recommendations of the proper grade of oil to use in a given car, allowance is made for a normal amount of dilution, it may be expected that the oil will be of suitable grade or viscosity after it has reached a state of equilbrium dilution. Hence, an oil rerefined by a process which does not remove the diluent, will be of correct equilibrium dilution, while if the diluent were removed, the oil would be too heavy or high in viscosity for the first 200 miles, more or less."—C. E. K.

BUNKER OIL IS TAKING PLACE OF BUNKER COAL

WASHINGTON, D. C., Nov. 17.—Evidence that bunker oil is rapidly displacing coal is seen in a statement made by John R. Bradley of the minerals division of the Department of Commerce. While bunker oil supplied to vessels engaged in foreign trade decreased from 4,423,773 bbls. in September, 1929, to 4,332,913 bbls. in the same month of 1930, bunker coal consumption decreased from 346,782 long tons in September, 1929, to 269,325 long tons in the same month of 1930.

Spreading the comparison over a longer period gives evidence of the increase in the use of oil and decrease in the use of coal for bunkering.

The total of bunker oil consumed during the nine-month period from January to September, 1930, was 38,747,584 bbls., a decrease from 39,527,153 bbls. used in the nine-month period of 1929, while during the same period there was a much greater percentage of decrease in the use of bunker coal or from 2,883,634 long tons in the nine-month period of 1929 to 2,486,287 long tons in the same nine months of 1930.

MESSLER LEAVES INDIAN

J. E. Messler, who has been in charge of lubricating oil tank car sales of Indian Refining Co. in Chicago, has resigned effective December 1. Before going with the Indian company, Mr. Messler was in charge of the Chicago office of the Crown Central Petroleum Corp. He has not completed his plans.

MARATHON BUYS DISTRIBUTION

The Marathon Oil Co., formerly the Transcontinental Oil Co., has purchased the bulk plants and service stations of the Triple D Distributing Co. in Fort Worth and Dallas, Tex. The company bought was a subsidiary of the Waggoner Refining Co., which was purchased by the Marathon Oil Co.

GASOLINE TAX COLLECTED IN FIRST SIX MONTHS TOTALS $230,600,455

WASHINGTON, D. C., Nov. 17.—A total of $230,600,455 was collected in the form of gasoline taxes by the states and the District of Columbia during the first six months of 1930, according to the compilation made by the Bureau of Roads of the Department of Agriculture. This figure excluded various tax exemptions.

The total tax collected represents an average of 3.39 cents a gallon, the net gallons of gasoline taxed and used by motor vehicles amounting to 6,809,863,076. During the calendar year 1929 the average tax collected was 3.22 cents per gallon or .17 of 1 per cent lower than the average for the first six months of 1930.

In its summary of these statistics the bureau shows that under the tax laws of the several states and the District of Columbia fees amounting to $381,644 were also collected which makes the total paid by owners of motor vehicles $230,982,099 for the six months.

Based on available figures the bureau estimates that during the current fiscal year 15,400,000,000 gallons of gasoline will be taxed and allowing for changes in the tax rate it is expected that $515,000,000 will be collected.

Distribution of Tax

"After deducting collection costs of $995,719," the bureau's summary states, "the states distributed the remainder as follows: $157,390,770 for construction and maintenance of state roads and $44,894,169 for construction and maintenance of county roads; $14,868,154 to apply on state and county road bonds; and $12,833,287 for miscellaneous purposes such as town and city streets, public schools, seawall protection of roads, inland waterways under state departments of commerce and navigation and oyster conservation."

The report shows that Georgia collected as tax on gasoline $6,432,781, of which it spent $1,071,430 for public schools.

Maryland collected in the six months $3,188,805, of which $629,361 was spent for streets of Baltimore and $37,500 for oyster conservation work, the oyster industry being one of the largest and most prosperous of the adjoining waters of Chesapeake Bay.

The State of Texas made liberal use of its gasoline tax for the free school fund. Of the total tax of $14,063,071 gathered in six months it turned over to the free school fund $3,515,768.

During the six months only one state increased its rate of taxation, that being Idaho which increased it from 4 to 5 cents on March 1.

Ohio Pays Biggest State Tax

The largest state tax on gasoline was collected by Ohio, the amount being $17,752,314, others following in order of their amount being California, $16,242,492; Pennsylvania, $15,952,587; Texas, $14,063,071; New York, $13,120,617; Illinois, $12,932,781.

However, while Ohio led in the amount of tax collected with a tax of 4 cents per gallon, New York with a tax of only 2 cents per gallon consumed 656,030,864 net gallons of gasoline, while California with a tax of 3 cents was second in quantity consumed to the extent of 541,416,391 gallons. Ohio's consumption of gasoline was 443,807,845 gallons. Illinois, with a tax of 3 cents, consumed 431,097,782 gallons. Pennsylvania, with a tax of 4 cents, consumed 398,814,666 gallons, and Texas, 351,576,762 gallons.

The cost of collecting the total gasoline tax during the six months was $995,719. Illinois being in the lead in this respect with a bill of $267,551. New York, consuming the largest quantity of gasoline, collected the tax at an expense of $133,965.—C. E. K.

OIL FOR CONTINENTAL PLANT

The Continental Oil Co. has begun shipment of five tank cars of crude oil a day from the Wellington Field, in Larimer County, Colorado, to its new refinery north of Denver. This refinery, while it will have an initial capacity of only 2,000 bbls. of crude a day, is of modern construction and is being built on the unit plan to permit enlargement. It will be ready for operation January 1 and will represent an investment of $1,000,000. Wellington crude is being stored in two 55,000-bbl. tanks in anticipation of commencement of operations. Discovery of oil on Greasewood Dome 65 miles northeast of Denver fits in with the Continental development. The company is acquiring leases in that area and has applied to the Public Utilities Commission for a permit to build a pipe line from Greasewood to its new refinery. The Greasewood discovery well drilled by Platte Valley Petroleum Co., has not yet been drilled in, but continues to flow 250 to 300 bbls. of 42 gravity crude a day in heads lasting 20 to 30 minutes and coming at four-hour intervals.

VACUUM TAKES CONTROL

The Vacuum Oil Co. on Monday, November 10, took over operation of the White Star Refining Co. which has plants in Woodville, Ill., and Trenton, Mich. At the same time the name of the corporation was changed to the Trenton Oil Co. According to President H. B. Earhart of the Whit Star, the business will continue to use the White Star name.

CHINESE MARKET INTERESTING

The Chinese market for oil presents one of the most interesting examples in the world of the rise of a widespread demand for a product not native to the country, which can be handled profitably only in large volume and is delivered to the consumer in minute quantities through agency networks which must be of very fine mesh to capture and hold the trade, says a Department of Commerce bulletin. When one considers the extent of this trade, handling oil in shipload lots from abroad to China and eventually selling it in tiny cupsful, containing not more than 1 ounce, one can appreciate the organization required to bring Chinese trade to the total of $49,470,619, which it reached in 1929.

OBJECT TO GASOLINE TARIFF

CHATHAM, Ontario, Nov. 17.—Representatives of independent distributors of gasoline in Canada recently conferred with G. D. Robertson, acting minister of national revenue at Ottawa, protesting against the dumping duty on gasoline imported from the United States. A further conference will be held with E. B. Ryckman, acting premier, on his return from the Canadian West.

GLOBE RESUMES OPERATIONS

The refinery of the Globe Oil & Refining Co., Lamont, Ill., has resumed operations after a brief shutdown for alterations and a general overhauling of the plant.

TRAINING PLANNED FOR CONTINENTAL SALESMEN

One hundred sixty-six men, from all portions of the United States, are to attend a special school in Ponca City, Okla., arranged by the Continental Oil Co. Six groups will be in Ponca City for this purpose.

Continental has 12 division offices throughout the United States, each with a division manager in charge, and each manager having from one to four assistants. These are the field salesmen for the company.

Division managers will constitute the group attending for the first two weeks, and the assistant managers will go at later periods. This is the first time Continental has attempted to conduct a training center, the designation used by the company. It will be developed to include the entire personnel of the company ultimately.

In charge of this training center will be E. S. Karstedt, vice president in charge of marketing; L. R. Milne, assistant to Mr. Karstedt; and Harry J. Kennedy, general sales manager. The school will be conducted under the auspices of the sales promotion and advertising division, of which J. E. Moorehead is manager, and Frank Moore as special representative will be in direct charge.

BONDING OF GASOLINE DEALERS RECOMMENDED

A recommendation will be made to the next Nebraska legislature that gasoline dealers be required to post a bond of at least $5,000 for payment of taxes due the State, State Treasurer W. M. Stebbins has announced.

"Some other states have such a law and it seems to be a necessary protection against irresponsible men who go into the business of selling gasoline," Mr. Stebbins declared. It is the small dealers rather than the large companies who are usually in the delinquent class, he said.

"There is more inducement now to bootleg gasoline than when we had a 2-cent tax," the state treasurer added. "The 4-cent tax makes violation more profitable than formerly. Kansas has a 3-cent tax and the freight rate to Kansas points is 1½ cents less than to Nebraska territory, so a bootlegger along the Kansas line can profit by a difference of 2½ cents per gallon by bringing it into Nebraska without paying the Nebraska tax or Nebraska freight rate.

"Farmers sometimes haul a barrel across the line from Kansas into Nebraska. Along the South Dakota line some have attempted to profit by bringing gasoline into Nebraska after getting a rebate from South Dakota allowed on gasoline used for agricultural purposes. After getting this rebate in South Dakota the purchaser brings the gasoline into Nebraska free of our 4-cent tax."

CONVENTION DATES ANNOUNCED

Dates for forthcoming divisional conventions of the Northwest Petroleum Association have been announced as follows: Minnesota division, Radisson Hotel, Minneapolis, Minn., January 14 and 15, 1931; North Dakota division, Dacotah Hotel, Grand Forks, N. D., January 29 and 30, 1931.

THIRTY-FOURTH STATION SITE

CHICAGO, Nov. 17.—D. E. Waggoner has acquired the site for his thirty-fourth service station in the Chicago district. The new station will be at the northwest corner of LaSalle Street and Grand Avenue, about four blocks north of the Chicago River on the North Side. Mr. Waggoner is reported to have several other sites in view.

Soil tested!

Too great a risk is involved to take a chance on uncertain pipe line coating. The coating which fails under soil stresses, allows electrolysis or corrosion to attack the metal, is the costliest covering you can buy.

Sherwin-Williams, world's largest manufacturers of protective coatings, offers you LYNE-KOTE as science's best answer to the pipe protection problem.

Arrange for a Lyne-Kote sample. Test it under every soil and condition you can find. Try its resistance to thermal changes, alkali, acid. Try it for ease of application. Analyze Lyne-Kote for free sulphur or other impurities.

We are confident of your decision. For Sherwin-Williams testing laboratories have subjected Lyne-Kote to far more exacting trials than actual service can ever impose. In addition Lyne-Kote has an impressive service record on nationally-known pipe lines.

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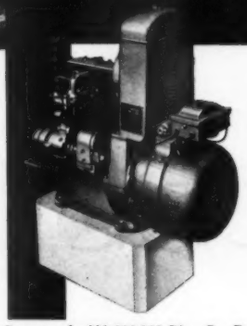

GET THE BIG JOBS DONE!

Scene on the $11,000,000 River Des Peres drainage project. Kohler Electric Plants provide steady, reliable light for night work.

FOUR different construction companies are working on the River Des Peres project in St. Louis, Missouri. Each of them relies on Kohler Plants to provide electric light for extra hours of work. Machines can be kept busy 24 hours a day — work can proceed always at top speed.

With a reputation for ruggedness, Kohler Electric Plants have established themselves as standard equipment in many large engineering outfits. At the Des Peres River job they serve inside the sewers, on cars, on shovels — providing electricity for light, refrigeration and operation of small motors. In city work, they become a quickly transportable source of electric current for cutting pavements, operating drills, floodlighting construction work. They have many uses, too, on trains, boats, trucks and in other isolated spots which cannot be connected with the power lines.

Kohler Plants generate electric current at 110 or 220 volts A. C. or D. C. Capacities range from 800 watts to 10 K. W. There are many different models — one of them fits *your* equipment. Mail the coupon for further information answering your special needs. Kohler Co. *Founded* 1873. Kohler, Wis. — *Shipping Point*, Sheboygan, Wis. — *Branches in principal cities.* . . . Manufacturers of Kohler Plumbing Fixtures.

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Gentlemen:

Please send catalog describing Kohler Electric Plants.

Name _____

Street _____

City _____ *State* _____

Use in which interested _____

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 42)

GRADY COUNTY

J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w...Shut down 100 ft.

GRANT COUNTY

Bu-Vi-Bar and Amerada's No. 1 Hurst, C SW Sec. 25-26-5w ....Fishing 5,864 ft.

GREER COUNTY

French's No. 1 Murphy, SW NW SE Sec. 23-7-21w.....Shut down 500 ft.

HARMON COUNTY

Harmon-Tex Oil Co.'s No. 1 Hoadley, NE cor. Sec. 17-4-24w ....Shut down 2,593 ft.
S. M. Stauffer's No. 1 Castleman, SW NE Sec. 8-4-26w..Shut down 625 ft.

HARPER COUNTY

Empire's No. 1 Bruce, C NE SW Sec. 12-25-20w.....Rigging to drill deeper 7,195 ft.
Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW Sec. 14-26-24w ....20,000,000 ft. gas 5,350-5,400 ft., total depth 8,589 ft.; shut down; sprayed 50 bbls. gasoline.

HASKELL COUNTY

I. T. I. O.'s No. 1 Blake, SW NW Sec. 3-10-21.....Drlg. 2,355 ft.
Mid-Western's No. 1 Poister, C NE SE Sec. 33-10-22....Shut down 4,297 ft.
Holden's No. 1 Phillip, SE cor. Sec. 3-9-18e.....Shut down 1,860 ft.
Marion Oil's No. 1 Sanders, NW NE NW Sec. 10-9-18e..Shut down 2,387 ft.
Sanboise Gas' No. 1 Unknown, SW NW SE Sec. 32-9-21e..Shut down 2,100 ft.

HUGHES COUNTY

Wright et al's No. 1 Ott, SE SW Sec. 15-5-11.....Shut down 1,645 ft.
Irwin et al's No. 1 Jones, SE NW Sec. 30-5-10.....Shut down 4,270 ft.; cmtd. 6-in.

KAY COUNTY

Peters & Buckles' No. 1 Hayes, NW NE NW Sec. 24-28-3 ....Shut down 50 ft.
Mummert Drlg. Co. et al's No. 1 Cormick, C NW SE Sec. 9-27-2 ....Rig.
Blackwell's Oil & Gas Co.'s No. 1 Harshman, Sec. 2-26-1w..Rig on ground.
Boucher Oil Co.'s No. 1 Jefferson, NE SW Sec. 32-26-1w..Shut down 1,175 ft.
Blankinship Petroleum Co.'s No. 1 Hansen, SW NW SW Sec. 17-27-2 ....Sand 3,590-97 ft.; swabbed 34 bbls. after 40-qt. shot; flowed 34 bbls. pumping 30 bbls.; completed.

KINGFISHER COUNTY

Prairie and Slick's No. 1 Wright, C NW SW Sec. 23-15-5w ....Drlg. 6,215 ft.
Galt Brown's No. 1 Wolf, NW SE Sec. 6-16-7w.....Drlg. 7,022 ft.

KIOWA COUNTY

Riley et al's No. 1 Grebb, SW NE Sec. 6-7-16w.....Drlg. 1,260 ft.

LEFLORE COUNTY

Red Bank Oil Co.'s No. 1 fee, SE NW Sec. 23-9-24.....Wilcox 6,128-6,298 ft.; dry; plugged back to 5,426 ft. to save gas.

LATTIMER COUNTY

Mid-Western Oil & Gas' No. 1 Bullo, C E half SW Sec. 3-6-17 ....Rig.
LeFlore Oil Co.'s No. 1 McBee, NW cor., Sec. 3-7-21....Shut down 3,601 ft.
Mid-Western's No. 1 Morris, C NW SE Sec. 12-6-21....1,562-1,650 ft.; dry; shut down 2,075 ft.
Limestone Oil & Gas Co.'s No. 1 Murray, NE cor. Sec. 25-5-18 ....Shut down 2,625 ft.

LINCOLN COUNTY

Mote et al's No. 1 Stafford, NW NE Sec. 32-17-4.....Location.

LOGAN COUNTY

Slick and Ramsey's No. 1 Jones, SE NW Sec. 24-17-2w..Drlg. 5,305 ft.
Eason Oil Co.'s No. 1 Young, C SW NE SW Sec. 34-17-4w..Sand 4,919-42 ft.; made 870 bbls. 21 hrs. and 485 bbls. 24 hrs. the second 24 hrs.

McINTOSH COUNTY

Patterson et al's No. 1 Smith, SW cor. NW SE Sec. 32-9-16 ....Drlg. 5,568 ft. in sand.

McCLAIN COUNTY

Prairie's No. 1 Parkinson, SW NW Sec. 22-7-2w .....Drlg. 4,915 ft.

MUSKOGEE COUNTY

Sioux Oil Co.'s No. 1 Unknown, NW SE Sec. 21-11-19...Shut down 1,011 ft.

NOBLE COUNTY

Barnsdall's No. 1 Miksch, NW SW Sec. 12-21-1 .....Drlg. 2,600 ft.

OKFUSKEE COUNTY

Henry Oil Co.'s No. 1 Harjo, Sec. 36-12-9 .....Shut down 4,127-57 ft.; water.
E. L. Robinson's No. 1 Rice, NW Sec. 2-10-9 .....Location.
Shepard et al's No. 1 Neveas, SE NW SW Sec. 3-12-10 ..Shut down 3,690 ft.

OKLAHOMA COUNTY

L. C. Hivick's No. 1 Sunset Addition, NW SW NW Sec. 17-11-3w ....Shut down 5,515 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Messer, SW cor. Sec. 32-14-3w ....Wilcox 6,697-6,771 ft.; shot with 90 qts. and 140 qts.; flowed 462 bbls.; shut in.
Warr et al's No. 1 Castle, SW NW Sec. 20-11-3w.....Drlg. 6,815 ft.
J. F. Cuniff, trustee's No. 1 Church Land, NE SW SE Sec. 17-12-4w ....Shut down 6,700 ft.

OSAGE COUNTY

Millard & Stanley's No. 1, SE SW Sec. 4-28-7.....Rig.

PAWNEE COUNTY

Rookstool's No. 1 Wylie, NW NE SW Sec. 6-20-5 .....Rig.
Morgan & Flynn's No. 1 Freeman, NW cor. Sec. 1-20-5..Drlg. 3,640 ft.
Sperry et al's No. 1 Mullrap, SE SW Sec. 2-22-5 .....Drlg. 600 ft.
L. E. Wentz' No. 1 G. Lilly, SE SW NE Sec. 26-22-3....Drlg. 3,119 ft.
Cochran et al's No. 1 Green, NE cor. SW Sec. 15-23-5...Rig.

PITTSBURG COUNTY

C. Canady's No. 1 Jones, NW cor. Sec. 14-8-14.....Rig.

ROGER MILLS COUNTY

Bucy & Stone's No. 1 Williams, C SW Sec. 23-12-24w....Shut down 2,245 ft.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w....Shut down 2,905 ft.

SEMINOLE COUNTY

Sunray Oil Co.'s No. 1 Sunday, NW SE Sec. 35-5-5....Location.

WASHITA COUNTY

Cooper & Terhune's No. 1 Blocker, NW cor. Sec. 29-8-19w.Drlg. 130 ft.
Burns & Prince's No. 1 Deck SW cor. Sec 21 8 18 .....Rig.
Petroleum Holdings, Inc.'s No. 1 Musie, NW cor. Sec. 10-9-20w ....Shut down 280 ft.

WOODS COUNTY

Gypsy-Prairie et al's No. 1 Thompson, SE cor. SW Sec. 10-25-15w ....Abandoned 6,104 ft.
Sinclair Oil & Gas Co.'s No. 1 Showalter, C SW SW Sec. 33-27-16w ....T. D. 7,280 ft.; plugged back to 6,730 ft.; shot 30 qts. 6,805-25 ft.; no results; plugged back to 4,885 ft.; shot 40 qts. 4,885-4,985 ft.; drlg. out bridge 2,900 ft.

WOODWARD COUNTY

Farrond et al's No. 1 Unknown, SE cor. SW SE Sec. 2-22-17w ....Shut down 1,387 ft.
Prairie Oil & Gas Co. et al's No. 1 Wilbur, NE cor. NW Sec. 22-23-17w ....Shut down 7,445 ft.

OKLAHOMA PANHANDLE

CIMARRON COUNTY

Magnolia's No. 1 School Land, C SW NE Sec. 27-5-5....Abandoned dry 4,756 ft.

TEXAS COUNTY

Argus Prod. Co.'s No. 1 Fischer, C NW Sec. 29-6-14...Location.
Three Way Oil Co.'s No. 1 Crane, SW NW Sec. 11-1-18 ....Shut down 4,425 ft.
Palo Alto Oil Co.'s No. 1 Graves, NE SW SW Sec. 23-2-18e ....Spudded; shut down.

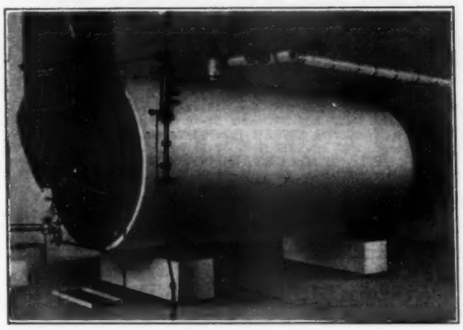
SOUTHERN OKLAHOMA

ATOKA COUNTY

Brookshire's No. 1 R. W. Rowland, NW NE SE Sec. 18-3s-10 ....Shut down 400 ft.

BRYAN COUNTY

Bryan County Oil's No. 1 Childs, NW SE SW Sec. 7-7-10..Shut down 425 ft.



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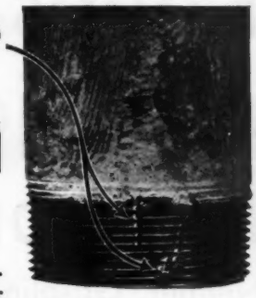

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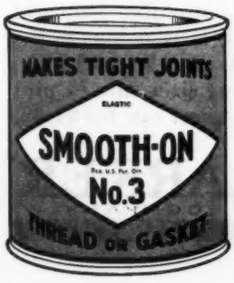

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Bush et al's No. 1 Commerce Trust, NE cor. Sec. 35-6s-9 ..... Shut down 525 ft.
Johnson et al's No. 1 Ussery, SE SW SE Sec. 14-16s-7e.. Shut down 485 ft.
Marshall's No. 2 Fee, C SW NW Sec. 26-5s-7 ..... Shut down; 6-in. csg. 265 ft.

CARTER COUNTY

Campen-Lasater Co.'s No. 1 Anderson, NE cor. SE NE SE Sec. 32-4s-2 ..... Drlg. by casing 2,590 ft.

LOVE COUNTY

Hobbs et al's No. 1 Roberts, NE cor. SW sec. 20-6s-3w.. Shut down 3,130 ft.

MARSHALL COUNTY

D. H. Curry's No. 1 Ward, NE SE SW Sec. 15-5s-6.... Drlg. 1,045 ft.
Kemer Oil's No. 1 Barnard, NW NE SW Sec. 28-5s-6e... Abandoned 1,360 ft.
McCrory et al's No. 1 Adams, NE SW SE Sec. 31-7s-6.. Rig.
Akers et al's No. 1 Spicer, SW SE SE Sec. 33-5s-7e.... Shut down 370 ft.

McCURTAIN COUNTY

Milton et al's No. 1 Vase, SW NW Sec. 26-6s-21..... Shut down 2,287 ft.

STEPHENS COUNTY

Obermyer et al's No. 1 Skelton, NE SW SW Sec. 32-15-7w ..... Shut down 1,375 ft.
R. Southard's No. 1 McKinney, NE cor. Sec. 25-1-8n.... Shut down 1,060 ft.

WILDCAT OPERATIONS IN KANSAS

(Continued from Page 43)

GOVE COUNTY

Johnson and Atlantic's No. 1 Wright, SE NE Sec. 11-12-27w ..... Drlg. 2,455 ft.
Valerius & Baucher Oil Co.'s No. 1 Todd, NW cor. Sec. 24-13-27w ..... Drlg. 4,460-65 ft.; show water; fishing.

GRAHAM COUNTY

Schleimeyer et al's No. 1 Clark, SW NE NE Sec. 11-9-25w. Drlg. 1,700 ft.
Gulf Coast Oil Co.'s No. 1 Johnson, C S half Sec. 27-8-25w. Shut down 4,370 ft.

GRANT COUNTY

McKenna et al's No. 1 Sullivan, NE cor. Sec. 12-29-38w.. Drlg. 2,435 ft.

GREENWOOD COUNTY

Staats et al's No. 1 Swan, NE NW Sec. 3-25-12..... Rig.
F. Konkay et al's No. 1 Rock, NW NE NE Sec. 7-27-12.. Shut down 1,836 ft.

HARPER COUNTY

Atkinson et al's No. 1 Misak, SE cor. Sec. 25-34-6w..... Rigging up standard tools 4,635 ft.
Beeler et al's No. 1 Bear, C NE Sec. 21-31-6w..... Shut down 1,830 ft.

KINGMAN COUNTY

Skelly Oil's No. 1 Miles, NE cor. Sec. 30-27-10w..... 1,635-40 ft. 2,000,000 ft. gas; at 2,005-20 ft., 6,000,000 ft. gas; landing 10-in. csg. 2,027 ft.

KIOWA COUNTY

Phillips-Prairie's No. 1 Bean, NE SE Sec. 10-30-17w..... Drlg. 4,775 ft.
McKenna et al's No. 1 Ralston, C NE Sec. 14-28-20w.... Rig.

LYONS COUNTY

Griffith et al's No. 1 King, NW cor. Sec. 8-19-10 ..... Shut down 910 ft.

MARION COUNTY

Aladdin Pet.'s No. 1 Koch, NW NE Sec. 26-17-3 ..... Rig.
Midwell's No. 1 La Master, NW cor. Sec. 31-22-4..... Rig on ground.
Marshall et al's No. 1 Higgins, NE cor. Sec. 33-19-5..... Rig.

MARSHALL COUNTY

Swicker & Sincox's No. 1 Remple, C N half NW Sec. 22-4-9 ..... Drlg. 1,295 ft.
Brazier et al's No. 1 Runkel, SE NW Sec. 13-2-6..... Shut down 50 ft.

McPHERSON COUNTY

United Pet. Co.'s No. 1 Kalgi, NE cor. Sec. 20-19-1w..... Location.
Henderson & Holden's No. 1 Sommerfield, NE SW Sec. 23-19-1w ..... Drlg. 600 ft.
Aladdin Pet.'s No. 1 Rudolph, NW NE Sec. 36-18-3w.... Drlg. 200 ft.
Slick et al's No. 1 Randell, C SW SW Sec. 35-17-5w..... Shut down 50 ft.
Aladdin Pet. Co.'s No. 1 Larson, C NW Sec. 22-18-4w... Rig.

MORTON COUNTY

Hydraulic Oil Co.'s No. 1 State Land, NW SE Sec. 22-34-43w ..... Underreaming 5-in. csg. 3,460 ft.

MORRIS COUNTY

Urschell et al's No. 1 Bersuch, NW SE NW Sec. 10-17-7.. Machine.
Pratt et al's No. 1 Whiting, NW SW SW Sec. 34-16-6.. T. D. 2,600 ft.; abnd.
Hankerson et al's No. 1 Cessman, SW SE Sec. 24-16-9... Rig.
Urschell et al's No. 1 Scott, NE NW Sec. 6-16-6..... Shut down 2,420 ft.

OSAGE COUNTY

Riggs & Smith's No. 1 Wood, SE NW Sec. 21-14-15..... Shut down 410 ft.

PAWNEE COUNTY

Phillips' No. 1 Cuthbertson, NE cor. Sec. 27-20-8w..... Drlg. 3,075 ft.

PRATT COUNTY

Wilcox O. & G. Co.'s No. 1 Bappin, SW NW Sec. 7-26-15w ..... Fishing 4,353-95 ft.; water.

RAWLINS COUNTY

Danciger Oil & Ref.'s No. 1 Unknown, SW cor. Sec. 3-2-35w ..... Drlg. 1,875 ft.

RENO COUNTY

Braden et al's No. 1 Thersen, SE NE Sec. 6-22-4w..... Shut down 3,380 ft.
Alco Royalty's No. 1 Kinney, SE cor. Sec. 16-27-7w..... Fishing 3,670 ft.
Shell Pet Corp.'s No. 1 Popp, NW cor. Sec. 11-25-5w... Drlg. 3,581 ft.

RICE COUNTY

Streeter & Stearns' No. 1 Blake, NE NW Sec. 9-18-10w.. Location.
Muth Bros. No. 1 Beyers, NE NW Sec. 21-19-9w..... Drlg. 1,178 ft.
Jasper & Beschka's No. 1 Cupp, SW NE Sec. 22-18-9w .. Drlg. 2,010-20 ft.; 7,500,000 ft. gas; drlg. 3,168 ft.
United Pet. Co.'s No. 1 William, NE cor. Sec. 29-21-9w.. Drlg. 3,157 ft.
Tatlock et al's No. 1 Ploog, C SW SE Sec. 33-18-9w.... Silicious lime 3,252-53 ft.; flowing 20 bbls. an hr. when shut in.

ROOKS COUNTY

Streeter-Stearns' No. 1 Conger, SE NW NE Sec. 16-10-16w ..... Drlg. 3,210 ft.

RUSH COUNTY

Prairie et al's No. 1 Lecker, NW SW SW Sec. 5-16-18w.. Drlg. 3,550 ft.; show oil at 3,337-50 ft. which exhausted; shut down 3,759 ft.
Syndicate Oil Co.'s No. 1 Lannen, C SW Sec. 11-18-16w... Drlg. 525 ft.

RUSSEL COUNTY

Empire Oil & Ref. Co.'s No. 1 Sherwood, SE NW NW Sec. 21-14-13w ..... Drlg. 3,165 ft.
Austin Drlg. Co.'s No. 1 Rochfellow, SE cor. Sec. 6-13-12w ..... Shut down 2,710 ft.
Gilbreath et al's No. 1 Bratton, C NE Sec. 32-11-13w... Shut down 2,155 ft.

SEDGWICK COUNTY

Streeter & Stearn's No. 1 Tobin, SW SE NE Sec. 5-22-2... Drlg. 1,330 ft.
Branson et al's No. 1 Kincaid, SE NW NW Sec. 4-28-1.. Shut down 50 ft.
Buck et al's No. 1 McNananan, NE NW NW Sec. 2-29-1.. Rig.

SALINE COUNTY

Sampson et al's No. 1 Sudenderf, NE SE Sec. 30-14-2w.. Rig on ground.
Twin Mounds Oil Co.'s No. 1 Weis, C W half NE NW Sec. 20-13-4w ..... Shut down 2,500 ft.

STEVENS COUNTY

Argus Gas' No. 2 Ponder, C NW Sec. 10-32-38w..... Drlg. 2,470 ft.
Western Prod. Co.'s No. 1 Ponder, C NE Sec. 10-32-38w.. Shut down 2,695 ft.
Western Prod. Co.'s No. 4 Fee, C NE Sec. 6-33-36w..... T. D. 2,812 ft.; 4,000,000 ft. gas; rig burned.
Braden et al's No. 1 Theisen, SE NE Sec. 6-22-4w..... Rig on ground.
McNabb and Mid-Kansas' No. 1 Rhinehart, C NE Sec. 22-32-39w ..... Rig.

SEWARD COUNTY

Liberal Gas' No. 1 C N half NE Sec. 4-35-34w..... Shut down 2,600 ft.

SUMNER COUNTY

Magnolia Pet. Co.'s No. 1 Shriver, NW SW Sec. 9-33-2.. Shut down 3,660 ft.
Disney et al's No. 1 Fay, C E half SE Sec. 14-34-1w.... Rig.
Davidson et al's No. 1 Strickland, SW cor. SE Sec. 12-35-1w ..... Rig.

WASHINGTON COUNTY

Sincox et al's No. 1 Penwell, NW SE NE Sec. 16-3-3.... Drlg. 1,620 ft.

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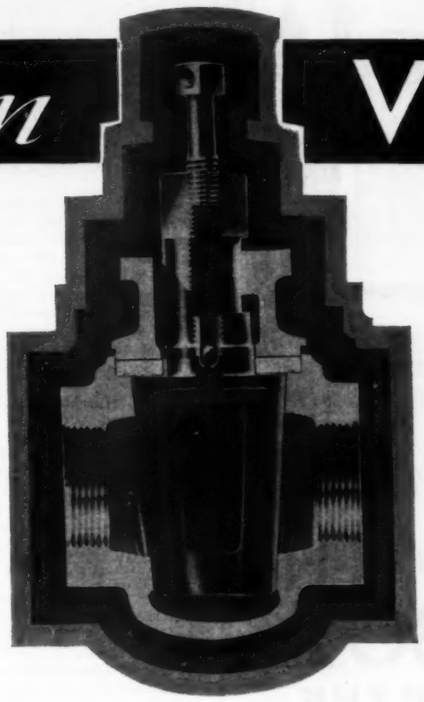

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NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

TEXAS PANHANDLE

Carson County

Magnolia Petroleum Co.'s No. 1 S. B. Burnett, 330 feet south and east of the NW cor. of the N half of the NW of Section 101, Block 4, I.&G.N.

Gray County

C. M. Lyons and others' No. 1 J. S. Morse, 330 feet north and east of the SW cor. of the N half of the SW of Section 17, Block A-9, H.&G.N. The Texas Company's No. 8 J. E. Williams, 330 feet south and 990 feet west of the NE cor., Section 7, Block 1, A.C.H.&B. North American Oil & Gas Co.'s No. 1 L. A. Sullivan, 1,320 feet north and west of the SE cor. of Section 160, Block 3, I.&G.N. Operators Royalty & Production Co.'s No. 1 M. S. Arnold-A, 330 feet north and east of the SW cor. of Section 148, Block 3, I.&G.N.

Danciger Oil & Refining Co.'s No. 2 Robert Sullivan, 231 feet south and 884 feet east of the northwest corner of the east 160 acres of the south 264 acres of the N half, Section 136, Block 3, I.&G. N. Survey. Same company's No. 1 Robert Sullivan, 231 feet south and 224 feet east of the northwest corner of the east 160 acres of the south 264 acres of the N half, Section 136, Block 3, I.&G.N. Survey.

Hutchinson County

Prairie Oil & Gas Co.'s No. 70 Johnson Brothers-A, 330 feet north and east of the SW cor. of the NE of the SW of Section 28, Block Y. Prairie Oil & Gas Co.'s No. 69 Johnson Brothers-A, 330 feet south and west of the NE cor. of the SW of the NE of Section 28, Block Y.

NORTH CENTRAL AND WEST TEXAS

Archer County

H. H. Fraser's No. 1 Long & Harry. 2,340 feet north and 150 feet east of the southwest corner of the H. A. Allen Survey, A-3. Perkins & Cullum's No. 2 Falls County School land (Humble Oil & Refining Co.), 150 feet south and 523 feet east of the NW cor., Section 19, Falls County School land, A-130.

Bridwell Oil Co.'s No. 1 Falls County School Land-B, 200 feet south and 1,000 feet east of the NW cor. of the north 50 acres of Section 35, Falls County School Land, A-130. J. Lincoln and others' No 1 J. Kovar, 150 feet north and 875 feet east of the SW cor. of Section 53, G. P. Meade Subdivision, L. M. Pasture. W. E. Maxon, Jr.'s No. 9 F. C. Green-B, 750 feet south and 1,750 feet east of the NW cor. of his 320-acre lease "B" out of the Joseph Levins Survey A-259. McLaughlin Brothers' No. 1 W. M. Justice-D, 150 feet north and west of the SE cor. of the south 79 acres of the east 105.85 acres of the south 211.70 acres of the W. M. Justice 640-acre tract out of the W. H. Patton Survey A-345.

Baylor County

Burns and The Texas Company's No. 1 W. B. Mills, 1,200 feet north and 1,161 feet east of the SW cor., Section 3,137, T.E.&L. Survey.

Brown County

Rector Oil Co.'s No. 1 J. A. Baker, 1,550 feet south and 450 feet east of the NW cor. of Section 11, A. White Survey No. 161. W. G. Sawyer's No. 2 G. W. Carmichael, 150 feet north and east of the SW cor. of the north 200 acres of the G. W. Carmichael 525-acre tract out of the P. Magee Survey No. 649.

R. C. McCarter and others' No. 1 D. C. Hazelwood, 200 feet north and east of the southwest corner of the S. Sanders Survey, No. 787, A-829.

Coleman County

Arcadia Refining Co. and others' No. 5 F. Golson, 870 feet south and 150 feet west of the northeast corner of their 80-acre lease out of the I. Harris Survey, No. 164. Meredith & Horrman's No. 1 J. P. Morris, 330 feet north and 450 feet west of the southeast corner of the A. Area Survey, No. 190.

Gutzman & Aldrich's No. 3 Sealy & Smith, 500 feet south and east of the NW cor. of the NE of Section 87, Block 1, G.H.&H. Smith & Shaffer's No. 4 S. M. Russell, 1,185 feet south and 400 feet west of the NE cor. of Section 10, North Subdivision, M. Martinez Survey No. 751.

Cooke County

Hamilton & Seltz' No. 1 P. Shipley, 1,050 feet north and 150 feet west of the most easterly southeast corner of the west 80 acres of the east 160 acres of the P. Shipley 320-acre tract out of the M. Hunt Survey, A-506. Danciger Oil & Refining Co.'s No. 3 T. Truebenback, 450 feet north and 161 feet east of the southwest corner of the T. Truebenback 200-acre tract out of the J. Clark Survey, A-194. D. L. Edmiston's No. 1 H. Henscheid, 150 feet south and west of the northeast corner of the south 80 acres of the west 160 acres of the P. Whiting Survey, A-1,116.

Deep Rock Oil and Faith Oil Co.'s No. 1 G. T. Purcell, 150 feet south and east of the NW cor. of the north 46.75 acres of the G. T. Purcell 133.33-acre tract out of the C. F. Stanley Survey A-907.

Crane County

Gulf Production Co.'s No. 88 J. T. McElroy, 2,762 feet south and 1,650 feet west of the NE cor. of the Gulf Production Co.'s lease out of Section 201, Block F, C.C.S.D.&R.G.N.G.

Crockett County

John W. Dieringer and others' No. 1 G. Banscorew estate, 330 feet south and 2,310 feet east of the NW cor. of Section 27, Block HH, G.C.&S.F. Taylor-Link Oil Co.'s No. 1 M. Bullock and others, 330 feet south and west of the NE cor. of Section 41, T.C.R.R.

Dawson County

R. Albough and others' No. 1 John Robinson, at the C NW, Section 46, Block M, E.L.&R.R. Survey.

Eastland County

Ed. Keough's No. 1 B. V. Owens, 350 feet south and west of the NE cor. NW, Section 78, Block 4, H.&T.C. Survey.

Ector County

Landreth Production Corp.'s No. 5 University-T, 330 feet south and 2,200 feet east of the NW cor. of Section 3, Block 35, University Land.

Gaines County

Texas Consolidated Oil and Texas Pacific Coal & Oil Co.'s No. 1 E. H. Jones, 2,310 feet south and west of the NE cor. of Section 4, Block A-8, Public School Land.

Glasscock County

F. H. E. Oil Co. and others' No. 1 J. W. Meek, 1,650 feet north and east of the SW cor., Section 7, Block 34, Township 3s, T.&P. Survey.

Grayson County

C. E. Marshall's No. 1 D. P. Mauldin, 150 feet south and west of the northeast corner of the southwest of the T. E. Jones Survey, A-655.

Howard County

Magnolia Petroleum Co.'s No. 1 D. Roberts (Kelley), 330 feet north and west of the SE cor., Section 112, Block 29, W.&N.W. Survey.

Jack County

Brazos River Gas Co.'s No. 1 R. R. Clayton, 800 feet north and east of the southwest corner of the R. R. Clayton 284-acre tract out of the L. Knight Survey, A-324.

Loving County

Henshaw and others' No. 2 Reagan & McElvain, 1,650 feet northeast of the southwest line and 990 feet northwest of the southeast line of Section 84, Block 1, W.&N.W.R.R.

Mitchell County

The California Co.'s No. 10 W. L. Foster, Lease 1, 1,650 feet north and 660 feet west of the SE cor., Section 6, Block 29, Township 1s, T.&P. Survey.

Palo Pinto County

Ash Syndicate's No. 1 L. E. Seaman, 330 feet north and west of the SE cor. of Section 3, Block 3, T.&P.

Hutchinson Drilling Co.'s No. 1 T. Carter, 500 feet north and 2,600 feet east of the southwest corner of the M. W. Luckey Survey, A-289. Nelson Oil Syndicate's No. 1 P. Pierce, 300 feet north and 900 feet east of the most westerly

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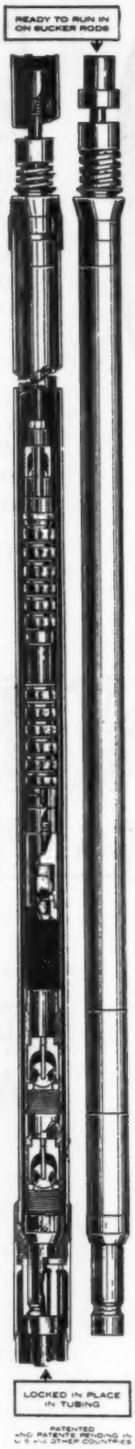

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SW cor., Section 80, Block 2, T.&P. Survey.

Parker County

Waters Drilling Co.'s No. 2 J. W. Davis, 1,500 feet north and 2,250 feet west of the SE cor., Section 2,550, T.E.&L. Survey.

Pecos County

Cardinal Oil Co.'s No. 2-F J. H. Tippett (Shell), 420 feet north and 150 feet east of the southwest corner of its 160-acre lease out of Section 61, Block 194, G.C.&S.F. Survey. Dixie Oil Co.'s No. 5 J. H. Tippett, 1,550 feet south and 150 feet east of the southeast corner of the Arnold & Barrett Survey, No. 539, A-3, and located in Section 61, Block 194, G. C.&S.F. Survey, being 150 feet south and east of the southwest corner of the Cardinal Oil Co. 160-acre lease.

Crosby Production & Royalty Co.'s No. 4 Mrs. M. A. Smith, 660 feet north and 330 feet west of the SE cor. of their lease out of Section 24, Block 194, G.C.&S.F. McCarty Oil Co.'s No. 3 A. A. Gray, 700 feet south and 2,260 feet east of the NW cor. of Section 591, G.C.&S.F., A-3,010.

Reagan County

T. B. Slick estate and others' No. 1 A. August, at the C SE, Section 1,216, G.C.&S.F. Survey.

Stephens County

Grantor Oil Co.'s No. 38 P. Swenson, 700 feet south and 3,700 feet west of the NE cor. of Section 5, Orphan Asylum Land. Grantor Oil Co.'s No. 39 P. Swenson, 300 feet south and 3,110 feet west of the NE cor. of Section 5, Orphan Asylum Land. Grantor Oil Co.'s No. 40 P. Swenson, 350 feet north and 3,600 feet west of the SE cor. of Section 6, Orphan Asylum Land.

Shackelford County

H. & H. Drilling Co.'s No. 1 D. G. Simpson, 750 feet north and east of the SW cor. SW, Section 13, Blind Asylum land. Hyde & James' No. 1 Morris & Buie, 220 feet north and east of the SW cor., Section 200, Block 10, E.T.R.R. Survey. Wilson Drilling Co.'s No. 1 Morris & Buie, 220 feet south and west of the NE cor. S half, Section 204, Block 10, E.T.R.R. Survey.

Throckmorton County

T. Harris and others' No. 1 J. J. Keeter, 600 feet south and 150 feet east of the NW cor., Section 2,188, T.E.&L. Survey.

Upton County

Gulf Production Co.'s No. 89 J. T. McElroy, 2,762 feet south and 4,950 feet east of the NW cor. of the Gulf Production Co.'s lease out of Section 200, Block F, C.C.S.D.&N.G.R.G.

Ward County

Alpine Oil & Development Co.'s No. 1 J. F. Boogher, 2,200 feet southeast of the northwest line and 1,800 feet northeast of the southwest line of Section 11, Block 5, H.&T.C. Survey. Texas Pacific Coal & Oil Co.'s No. 1 H. James, 330 feet northwest of the southeast line and 330 feet northeast of the southwest line of Section 5, Block 34, H.&T.C. Survey.

Rickford & Smith's No. 1 Johnson, 120 feet northeast of the northeast line of Section 7, Block 32, H.&T.C., and 2,900 feet southeast of the northwest line of Section 11, Block 5, H.&T.C.

Wichita County

Schlaffke & Blair's No. 3 W. B. Honaker, 1,050 feet south and 450 feet east of the NW cor. of Section 1, C.&M., A-379. Walton & Blair's No. 4 W. B. Honaker, 450 feet south and east of the NW cor. of Section 1, C.&M., A-379.

Young County

Akin & Rayzor's No. 3 J. A. Winkler, 150 feet south and 450 feet east of the northwest corner of the south 35 acres of the J. A. Winkler 100-acre tract and located in the J. Poitevent Survey, No. 1, A-226. O. Bratcher's No. 6 F. M. Cullers, 450 feet south and 750 feet west of the NE cor. SE SW, Section 2, C.T.R.R. Survey, A-2,177. Bridwell Oil Co.'s No. 1 J. M. Bloodworth, 450 feet south and 150 feet east of the NW cor., Section 326, T.E.&L. Survey. Consolidated Oil Co. and others' No. 1 G. Greer and others, 1,083 feet north and 150 feet east of the SW cor., Section 76, T.E.&L. Survey. King Royalty Co. and others' No. 2 J. M. Kirkland, 1,650 feet south and 450 feet west of the northeast corner of the J. M. Kirkland 120-acre tract out of Section 2,249, T.E.&L. Survey. Panhandle Refining Co.'s No. 6 B. H. Larimore and others, 1,350 feet south and 150 feet east of the northwest corner of the east 40 acres of the SW, Section 2,247, T.E.&L. Survey. The Texas Company's No. 1 E. N. Lunn, 1,650 feet south and 1,932 feet west of the NE cor., Section 186, T.E.&L. Survey. Wise & Jackson's No. 1 C. D. Nicholson, 300 feet north and 1,000 feet west of the southeast corner of the north 120 acres of the W half, Section 225, T.E.&L. Survey. F. Taylor and others' No. 1 J. O. Lewis, 750 feet north and 1,350 feet east of the SW cor., Section 717, T.E.&L. Survey.

Corrections

In Brown County: C. E. Bonwell and others' No. 1 N. Coffey, 160 feet south and 160 feet east of the northwest corner of the N. Coffey 475-acre tract out of the heirs of William H. Wharton Survey, No. 318.

In Throckmorton County: Edwards & Moore's No. 1 D. McKeichan, 880 feet east of the east line of the C. W. Marquess Survey, A-236, and 770 feet south of the north line of Section 4, Comanche Indian Reserve.

Eastland County—Cranfill & Reynolds' No. 1 J. V. Parker, 450 feet south and west of the NE cor. of Lot 16, W. Van Norman Survey. Lone Star Gas Co.'s No. 1 B. P. Cozart, 406 feet south and 400 feet west of the NE cor. of Section 478, S.P.R.R.

Gray County—Operators Royalty & Production Co.'s No. 7 W. W. Harrah, 990 feet north and 330 feet west of the SE cor. of the SW of the NE of Section 150, Block 3, I.&G.N.

CENTRAL WEST FIELDS

(Continued from Page 66)

dry. Same parties are drilling a test northwest of Gerald on the Luke Kellams farm.

Reports are that Hamilton, Atwater and Sharpe have what shows for a 25-bbl. producer on the Bretz farm, slightly in advance of the Rock Hill Pool, in Ohio Township, Spencer County. Roger E. Williams and others' No. 1 Mary Berg farm, in Huff Township, slightly northwest of Carlton well, produced 45 bbls. initial from the Jackson sand at 574 feet.

C. C. Taliaferro Jr.'s No. 5 on the Aaron George farm, Section 30, Washington Township, Pike County, is reported good for 2,000,000 feet of gas at 1,123 feet. Mahutska Oil Co. is drilling on the Jos. A. Davidson farm, Section 20, Clay Township, same county.

Norris, Patterson and others' second test on the Ageton farm, Section 33, Harrison Township, had a slight showing of gas, but drilled into a dose of water and was abandoned as a dry hole.

Indiana Oil and Gas

Compiled by Paul F. Simpson, State Gas Supervisor, Department of Conservation, Division of Geology, by Counties.

Adams County—The Bermuda Oil & Gas Co. abandoned the D. Studebaker No. 4, in Section 5, Jefferson Township.

Allen County—Cyrus Shumaker and others are nearing the completion of a well on the Carl Rekeway farm near Woodburn, in Maumee Township.

Bartholomew County—Leases are being taken in Harrison and Ohio Townships, by a Chicago company.

DeKalb County—No. 1 Conrad, being drilled by the N. E. Master Oil & Gas Co. west of Ashley in Smithfield Township, is down over 400 feet.

Daviess County—Norris & Patterson abandoned their second well on the Ageton farm in Section 23, Harrison Township, because of water, although there was a strong showing of gas. Same parties are starting a well on the Joseph Haskins farm in Section 4, Harrison Township. The Lee Petroleum Co. has started No. 1 Andrew Himsel in Section 10.

Floyd County—The W. E. Hines Co. abandoned its test on the Nate Morton

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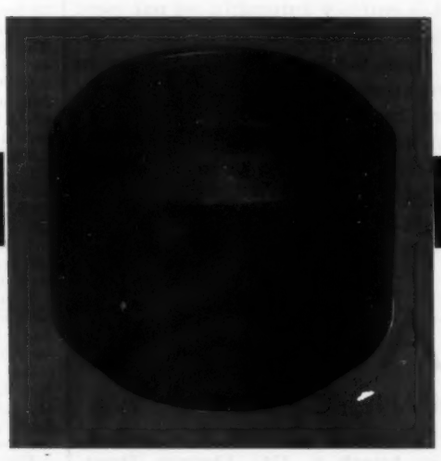

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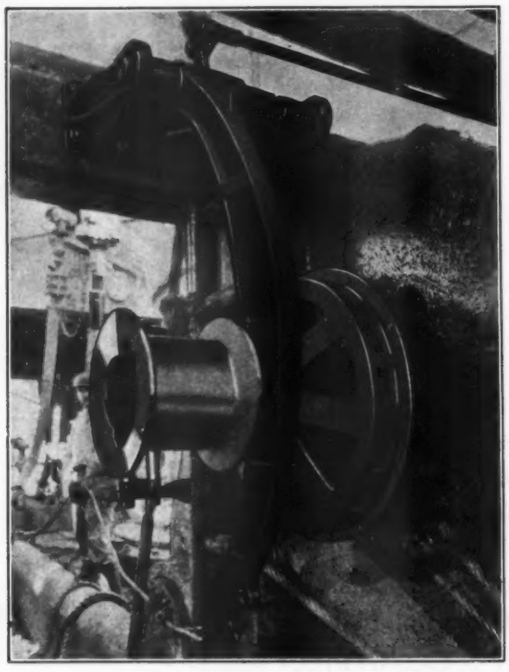

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farm northwest of New Albany at 2,044 feet, after passing through the Trenton.

Gibson County—The Indiana Southwestern Gas Corp. is drilling below 1,500 feet on the Riley farm near Summerville in Barton Township.

Hamilton County—L. A. Holeman and others completed a well at 10 feet in the Trenton on the Walter Edwards lease in Section 13, Washington Township. Initial production was about 15 bbls.

Harrison County—The Indiana Utilities Corp. completed No. 1 James Shields in Section 21, Boone Township, at 740 feet, where it produced about 200,000 feet of gas.

Huntington County—The Two Rivers Oil Corp. is drilling No. 3 Jacob Bussard about 2 miles south of Huntington. The Salmo Corp. has started a well on the Charles A. Wiley land in Section 18, Salamonie Township.

Jay County—J. J. Adams abandoned the S. W. Reed Nos. 2, 3, 4, 5, 6, 7, and the P. Hamilton Nos. 11 and 12 wells, all in Section 12, Jackson Township. The Citizens Bank of Portland abandoned 7 wells on the Chas. Dale lease in Section 4, Penn Township. Spender and Pontius abandoned No. 4 and No. 2 William F. Metzner, in Section 28, Blue Creek Township. Stewart and others brought in 50-bbl. initial production in the Joe Davis well recently completed in Section 27, Penn Township. The rig was moved to No. 9, which will be drilled to the deeper pay. The well on the C. C. Harris farm in Section 16, same township, drilled by the Flemwell Oil Co., has been held up by a fishing job. The well drilled on W. O. Hoppe's lot in Red Key was dry. Milligan & Brown's test on the Smith's Stone Quarry, about 2 miles south of Portland, in Wayne Township, is a light gas well.

Johnson County—Drilling has been resumed in the McQuiston well northwest of Franklin by the Universal Development Co. The depth is about 2,600 feet.

Madison County—The Pendleton Natural Gas Co. is starting a well on the Jess M. Shuman land in Section 7, Fall Creek Township.

Knox County—The Gardner Petroleum Co. plans another test in Busseron Township. Wells and Joyes are starting a test on the Elizabeth Roach farm in Donation 211, Busseron Township.

Monroe County—No. 1 Durbin Hessler, being drilled by the Saddle Creek Oil Co. in Section 4, Polk Township, is near the Trenton.

Perry County—T. F. Seitz and others completed the fifth and sixth wells on the Walter Haefele farm, in Section 11 Tobin Township. Both are producing from about 140 feet. Willis and others are testing to the south of these wells. Glenn & Dice plugged No. 1 Paul Hyde in the same section. They are now drilling a test on the Luke Kellams lease northwest of Gerald.

Pike County—C. C. Talliaferro is planning to drill on the Frank Builderback lease northeast of Petersburg. V. E. Bolyard and others' wildcat on the Everett Crow lease in Section 25, Patoka Township, is a 1,000,000-foot gas well at 1,115-23 feet. They are starting a test on the Patoka Coal Co. lease in the same section. The Mahutska Oil Co. has started a well on the Joseph A. Davidson lease in Section 20, Clay Township. The fourth and fifth wells on the Aaron George lease east of Alford in Washington Township, drilled by C. C. Talliaferro, each gauged 2,000,000 feet. They were completed at 1,138 and 1,123 feet. Claude Noble and others are drilling on the Byron Preston farm, in Section 30, Washington Township.

Rush County—The Central Fuel Co. has started a well on the William Cross farm in Section 8, Jackson Township.

Spencer County—R. E. Williams and others completed one of the best wells yet found in the Troy Pool on the Marie Berg lease, northwest of the Carlton wells. The initial production was about 45 bbls., from the Jackson sand at 574 feet. Hamilton, Atwater & Sharp brought in a producer on the Bretz farm at the edge of the Rock Hill Pool in Ohio Township.

Vigo County—No. 20 Wm. Riggs, drilled by the Siosi Oil Co. in Section 32, Prairie Township, is a 30-bbl. well. The initial production after the shot was reported at 90 bbls. for the Riggs-Thompson well, almost on the county line. Same company's No. 3 Lennie Thomas produced 25 bbls. from 2,245 feet. It is starting the Thomas and Williams line well No. 2.

Sullivan County—Fred Bays found water in the Wm. Kamieson shallow test in Section 19, Hamilton Township. He will start a test on the M. B. Jewell lease in Section 29, Curry Township. H. Huntington and others are starting the No. 1 Katherine Piety in Section 7, Turman Township. The Bert Wood deep test, drilled by Thomas & Ellis in Section 5, Curry Township, was dry at 2,320 feet.

Warrick County—W. C. McBride Co. is drilling No. 1 Mary Mollen in Section 35, Hart Township.

Washington County—The B. Levin test in Section 35, Brown Township was abandoned at 643 feet, after finding plenty of water in the lower part of the Corniferous limestone. Another well was rumored near Little York.

KENTUCKY-TENNESSEE

(Continued from Page 66)

on the Rhea and Jewell lease, 3 miles slightly south of due west of the discovery well on the McKinnie farm. It began flowing as the bit penetrated the sand but a couple of feet and conservative estimates place its production around 150 bbls. initial.

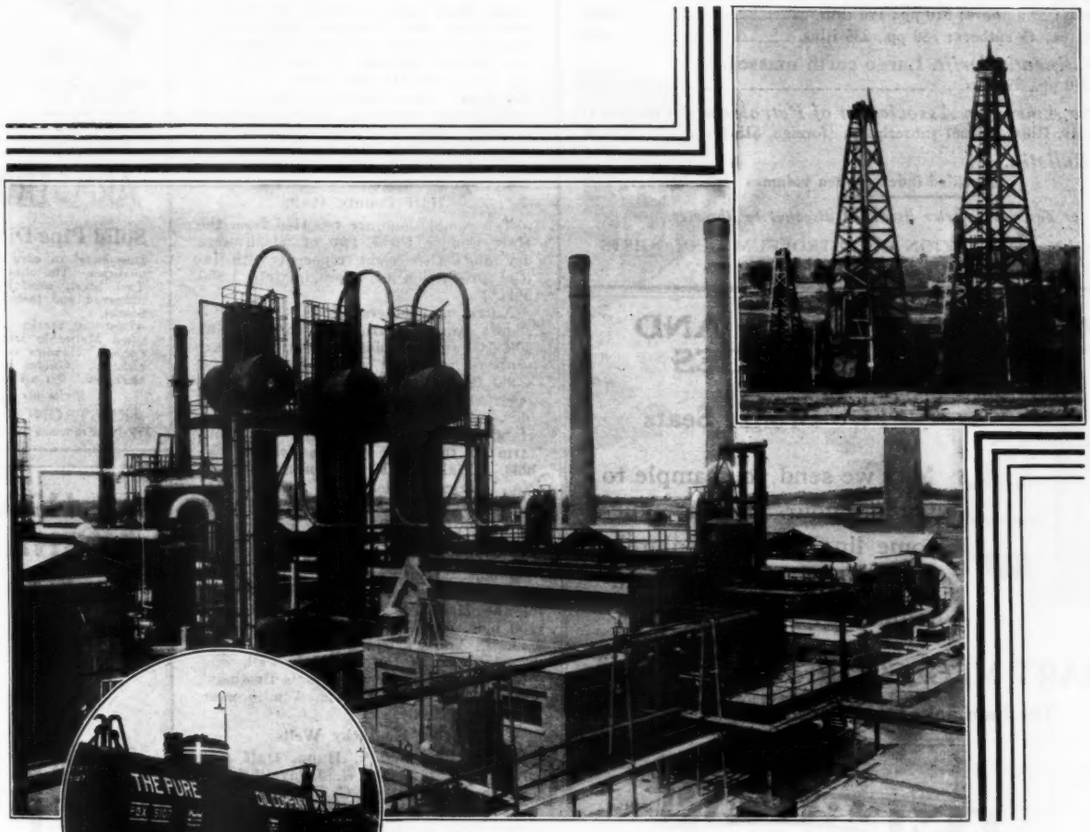
This new well has jumped over one dry hole and three gas wells and indicates that probably another new pool has been tapped or another one of several noses extending along the major gas structure has been drilled into on its crest. It can be said that Hart County now has a pool extending for at least 5 miles northeast-southwest and probably 1 to 2 miles wide, with possibilities for either oil or gas or both over most of this area lying parallel to the Center Gas anticline extending from Greensburg to Hiseville and perhaps far to the westward into Barren County. The well is near two gas wells and four rigs are drilling within a mile of the Rhea-Jewell lease, which lies near the junction of the Jackson Highway and the Legrande-Greensburg Pike.

Conservative operators estimate that at least 3,000 bbls. daily production could be shipped if all the 14 wells were operated to capacity; no less than 12 to 14 new wells are due in within next week or 10 days, the majority of which are within the proven area and should be productive, and will probably add 1,000 bbls. to the daily production. The 2-inch line of the Stoll Refining Co. to Horse Cave can probably run an average of 1,500 bbls. per day if tank cars and routine schedules permit of capacity shipments, so it can be seen the present outlet is already congested. It is understood that the Stoll company is contemplating stringing a 4-inch line from Hodgensville on the I.C.R.R. to enjoy the lower freight rates offered by that road. From 60 to 90 days would be required to lay this line and by that time there would be somewhere between 75 to 100 wells drilled, if operations should be continued at the present rate.

An unusual condition in this new field is the absence of many of the old time operators and "old line" companies, the majority of the holdings belonging either to local people who are working as syndicates or to partnerships whose experience is limited to a few years' operations in Barren or Metcalf Counties. Dr. L. C. Young, the Rex-Pyramid, the Wood Oil interests, the Cumberland Petroleum Co., constitute the representation of the older operators and companies. It may be said truthfullly that seldom is it possible to get a slice of good stuff in a field where 14 good producing oil wells and 6 good gas wells out of a possible total of 22 wells can be drilled at $1.25 per foot, using about 200 feet of 6¼-inch casing and getting a strong flow of commercial gas at about 480 feet and possibly a 400-bbl. well at 600.

Geology of Area

The geologists have kept up with the drilling and the character of a large por-



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tion of the gas structure is already quite familiar to them. The new records disclose a series of "noses" or projections extending out from the main structure, and remind one very much of the "scollops" our mothers cut in the paper for lining shelves in the pantry. These noses in places seem quite steep and are probably responsible for the trapping of the oil along their flanks. The Chattanooga black shale is usually employed in contouring the structural features and thus far it seems the oil is confined to the horizon between 70 feet above the sea level and 110 feet taken on top of the shale. Above the latter contour only gas has been found (at least in the sand below the shale where the oil is obtained) while all wells showing the shale to have dropped below the 70-foot contour have been dry.

Hart County Wells

Ten completions are reported from the Hart County Field, two of which were dry and other eight reported with initial production of approximately 1,850 bbls.

Norris and others' Nos. 1, 2 and 3 Louisa Garvin farm, are reported at 300, 100 and 100 bbls., respectively. Carpenter, Cross and others' No. 1 Coats, 4,300 feet northeast of No. 1 Garvin, is reported with initial production of 300 bbls. Norris and others' No. 2 Bob Hatcher lease, adjoining the McKinnie farm to the west is estimated at 250 bbls. initial. B. F. Wilson and others' No. 1 Trigg Caudel lease, south of McKinnie well, is reported better than 300 bbls., and the same company's No. 1 Lee Wilson farm, one-half mile southwest of the McKinnie well, with an initial of 300 bbls. Kentucky Natural Gas Co.'s No. 1 Rhea-Jewell lease, 2½ miles west of the McKinnie well, is estimated at 150 bbls. initial.

L. C. Young's test on the King farm, 3 miles west of the McKinnie well, was given up as dry, as was Norris Brothers' No. 1 J. A. Pedigo farm, 1 mile west of the McKinnie.

Other Kentucky Wells

In Daviess County, Hupp, Duff and others' No. 1 on the G. Jarnagin farm, is reported a duster. C. E. Daugherty's No. 3 on the Salmen Davis farm, on Green Brier Levy, was also reported dry. Same party found a dry hole in No. 3 D. O. Stimson farm, in the Red Hill Pool, and Evans and Garrison's No. 15 on the Davis heirs 109-acre farm, also in the Red Hill Pool, produced 15 bbls. the first pumping. S. M. Sirman's No. 8 H. K. Atherton farm, same pool, showed 5 bbls. initial, while White, Vickers and others' No. 1 Sims farm, same pool, is reported good for 1,000,000 feet, open flow.

The only completion in Ohio County reported, was Newton, White and others' No. 3 on the Lafe Payne 50 acres, which pumped 20 bbls.

Chester Oil Co. drilled in a second test on the William Bates farm, in the Pellville Field of Hancock County, and is reported with a volume of 2,000,000 feet of gas from the Barlow sand.

In McLean County, George Engle and others, No. 1 John Atherton farm, in the Barrett Hill area, is reported good for 30 bbls. initial. Meister & West or the Olean Petroleum Co.'s No. 1 Sam Harris farm, is reported dry at 1,430 feet. The Ohio Oil Co.'s No. 2 G. B. and R. L. McManama farm, an offset to a good well on the Atherton farm, was reported dry in both the Jett and Barlow sands.

In the Niagara Pool, in Henderson County, Wittmer Oil & Gas Co.'s No. 1 Jack Knight farm, showed 10 bbls. the first 24 hours. Pearson Petroleum Co.'s No. 2 R. T. Parker, same pool, is due for completion. Niagara Drilling Co. found a dry hole in No. 3 on the Jim Cooper property, and the Imperial Oil & Gas Products Co.'s No. 2 Joe Duncan, was good for only 2 bbls.

October Runs

Total runs made from wells served by the Illinois Pipe Line Co. in western Kentucky during October, 1930, follow: 257,927.08 bbls.

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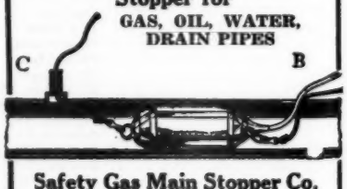

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Detailed Operations in All Fields Month of October

SUMMARY OF ALL FIELDS
Wells Completed

	Comp.	Prod.	Dry	Gas
Eastern	225	1,134	42	62
Central Ohio	110	1,954	39	37
Lima	16	124	1	8
Indiana	25	113	6	11
Michigan	23	1 108	10	5
Kentucky	78	3,244	29	11
Illinois	24	380	8	1
Missouri	1	.....	1	0
Kansas	111	17,150	45	29
Oklahoma	295	408.412	83	45
North Cent. Texas	156	2,473	100	13
East Central Texas	47	107,031	16	0
East Texas	2	.....	2	0
West Texas	45	27,104	15	0
Panhandle Texas	50	12,423	7	12
Gulf Coast	113	38,657	34	1
Southwest Texas	124	34,116	50	7
North Louisiana	53	2,814	19	23
Arkansas	7	910	4	2
Mississippi	6	.....	3	3
Montana	33	285	7	5
Wyoming	19	4,415	3	3
Colorado	5	30	2	2
New Mexico	39	237.593	4	1
Total October	1,596	900,570	530	282
Total September	1,551	1,049,123	526	290
Difference	45	148,553	4	8

Rigs and Wells Drilling

	Rigs	Drlg.	Total
Eastern	54	235	289
Central Ohio	46	161	207
Lima	4	28	32
Indiana	4	43	47
Michigan	66	117	183
Kentucky	11	153	164
Missouri	0	4	4
Tennessee	1	16	17
Illinois	2	28	30
Kansas	40	176	216
Oklahoma	104	558	662
North Central Texas	62	288	350
East Central Texas	8	25	33
East Texas	8	18	26
West Texas	33	172	205
Panhandle Texas	38	97	135
Gulf Coast	20	175	195
Southwest Texas	95	188	283
North Louisiana	46	100	146
Arkansas	10	46	56
Mississippi	15	28	43
Alabama	2	3	5
Montana	25	75	100
Wyoming	23	113	136
Colorado	13	80	93
New Mexico	13	98	111
Utah	1	29	30
Total October	744	3,054	3,798
Total September	680	3,159	3,839
Difference	64	105	41

Note—In the following report the Section, Township and Range are given first; then the farm, the owner, the serial number of the well and the initial production of the well. In lines where the Section, Township and Range are missing the wells are located in the Sections, Townships and Ranges which appear next above in the report.

OKLAHOMA FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carter	21	17,734	2	0
Creek	23	510	10	5
Hughes	10	1,102	4	3
Kay	11	45	1	8
Marshall	7	10	6	0
Muskogee	17	267	11	3
Okfuskee	4	105	0	1
Oklahoma	69	351,751	3	0
Okmulgee	10	174	2	5
Osage	18	1,345	6	3
Pawnee	10	87	5	1
Pontotoc	3	81	1	0
Pottawatomie	20	18,642	3	0
Seminole	20	16,065	5	1
Stephens	3	240	0	0
Wagoner	16	35	10	3
Miscellaneous	33	219	14	12
Total October	295	408,412	83	45
Total September	296	714,461	77	35
Difference	1	306,049	6	10

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Alfalfa	0	2	2
Atoka	0	1	1
Beckham	1	4	5
Blaine	0	1	1
Bryan	0	4	4
Caddo	0	9	9
Canadian	0	1	1
Coal	1	4	5
Carter	6	13	19
Cleveland	2	5	7
Comanche	0	5	5
Cotton	5	0	5
Creek	13	41	54
Garfield	2	4	6
Grady	1	2	3
Greer	0	2	2
Grant	0	4	4
Harper	0	1	1
Harmon	0	1	1
Hughes	1	11	12
Haskell	0	3	3
Kay	2	4	6
Kiowa	0	2	2
Kingfisher	0	2	2
LeFlore	0	2	2
Lincoln	0	3	3
Latimer	1	2	3
Logan	0	6	6
Love	0	1	1
McClain	0	1	1
McIntosh	0	3	3
Marshall	1	5	6
Muskogee	9	26	35
Noble	1	6	7
Okfuskee	3	15	18
Oklahoma	25	187	212
Okmulgee	2	17	19
Osage	5	17	22
Pawnee	2	15	17
Payne	2	8	10
Pittsburg	1	7	8
Pontotoc	2	8	10
Pottawatomie	4	22	26
Roger Mills	0	2	2
Seminole	5	36	41
Stephens	3	12	15
Tulsa	2	12	14
Wagoner	2	16	18
Woods	0	2	2
Woodward	0	1	1
Total October	104	558	662
Total September	99	630	729
Difference	5	72	67

WELLS COMPLETED

CARTER COUNTY

23-1s-8w Gill, Magnolia Pet. Co. 3 516
24-1s-3w Spigner, Trevelyn Oil Co. 3 .. 477
E. W. Spigner, Magnolia Pet. Co. 2 638
E. R. Spigner, Magnolia Pet. Co. 4 1196
Eaves, Anderson et al 4 2500
Hooks, Wirt Franklin Pet. Corp. 3 2092
25-4s-3w Coffee, P. H. Lively et al 2 .. 15
28-4s-2w Fulton, J. H. Hudson et al 1.. dry
19-1s-3w Meeks, Walter Gant et al 1 .. 200
24-1s-3w Hooks, Magnolia Pet. Co. 3 .. 600
13-1s-3w Hooks, Amos Drlg. 1 125
24-1s-3w Spigner, Trevelyn Oil Co. 4 .. 772
Spigner, Magnolia Pet. Co. 2. 966
Spigner, Magnolia Pet. Co. 3 .1146
W. Mitchell, M. G. R. Oil Co. 1 779
30-1s-2w W. Mitchell, Walter Gant et al 1 1100
24-1s-3w J. Franklin, Carter Oil Co. 2.1232
Evans, Anderson et al 5 1965
Hooks, Magnolia Pet. Co. 4 . 780
W. S. Spigner, Magnolia Pet. Co. 4 635
29-1s-3w Muller, Clark & Cowden & Ven Mex Pet. Co. 1 ..... dry

Wells completed 21
Production 17,734
Dry 2

CREEK COUNTY

26-17-9 Bright, Gilcrease Oil Co. 1-A. gas
11-17-10 Smith, O. M. Irelan 3 5
36-15-7 Bigpond, Olean Pet. Co. 4 .... gas
23-14-10 Kimble-Reading, Jenkins & Atlantic O. P. Co. 2 ..... dry
25-19-8 Hinton, I. T. I. Oil Co. 1 40
31-19-8 Bruner, Gled Oil Co. 1 160
30-17-7 Sellers, Gibson & Metz 1-A ... gas
2-17-9 Proctor, Elinor O. & G. Co. et al 1 ..... dry
15-17-9 Biggs, Dixie Drlg. Co. et al 1. dry
18-14-9 Carter, C. G. Tibbens O. & G. Co. 2 30
14-19-9 Oates, Prairie O. & G. Co. 1. 40
5-16-8 Emarthia, Magnolia Pet. Co. 6 gas
30-14-8 McGilbray, Sidwell Drlg. Co. 1-A 25
4-19-8 Dickerson, J. B. Greives 1 ... dry
27-17-12 Bowling, Hill Brothers 4 ... gas
6-14-9 White, C. G. Tibbens O. & G. Co. 2 ..... dry
11-19-9 Grayson, C. O. Buckles 1 90
20-19-9 Carter, Phillips Pet. Co. & Gled Oil Co. 5 120
23-18-9 Peen, Beal & Plumb et al 1. dry
33-18-11 Sapulpa, J. H. Winemiller 1-A dry
4-18-12 Brown, Lynch et al 1-A ..... dry
3-17-10 Taconey, Bryan Pet. Co. 2 ... dry
14-17-10 Baker, Murphy et al 2 ..... dry

Wells completed 23
Production 510
Dry 10
Gas 5
Gas production 52,540,000

HUGHES COUNTY

17- 7-8 Jackson, Independent O. & G. Co. 2 ..... dry
8- 6-8 Harris, Prairie O. & G. Co. 1. dry
8- 7-8 Kiker, Magnolia Pet. Co. 1 ... dry
17- 8-10 Perryman, Dixie Oil Co. and Phillips Pet. 3 267
17- 7-8 Jackson, Independent O. & G. Co. 1 ..... gas
15- 7-8 Haskett, Gilcrease et al 1 ... dry
9- 7-8 L. Tiger, Mid-Continent Pet. Corp. 1 735
11- 7-8 Foster, Pyramid Drlg. Co. 1 .. gas
17- 7-8 Brown, Droppleman & Rogers 1 ..... gas
20- 7-8 Elizabeth, Mid-Continent Pet. Corp. 1 100

Wells completed 10
Production 1102
Dry 4
Gas 3
Gas production 55,500,000

KAY COUNTY

1-28-1w Walker, McComas et al 1 ... gas
6-28-1 Wolfe, McComas et al 1 .... gas
3-25-2w Fruits, Continental Oil Co. 2 gas
6-28-1 Harvel, National Ref. Co. 1. gas
7-28-1 Barrett, John Hosaiks 2 10
8-27-1 Westerman, Wentz et al G-1. 35
34-26-2w Wolfe, Alco Royalty Co. 1 ... gas
17-26-2 Farha, Nuckolls-Riggs 1 .... dry
8-26-3 Doughty, Nuckolls-Riggs 1 ... gas
Doughty, Nuckolls-Riggs 2 .. gas
Doughty, Nuckolls-Riggs 3 .. gas

Wells completed 11
Production 45
Dry 1
Gas 8
Gas production 16,125,000

MARSHALL COUNTY

19-5s-6 Vandervelt, Boff Neff et al 1 dry
3-6s-6 Bialock, Scivner & Tompson 1 dry
30-5s-6 W. Rutland Co., Magnolia Pet. Co. 4 10
4-6s-6 Monday, R. L. Keener 2 ..... dry
8-6s-7 Hicks, George L. Pace 1 ..... dry
24-5s-5 Null, F. W. Merrick 23 ..... dry
8-6s-6 Marshall, Goddard Oil Co. 1. dry

Wells completed 7
Production 10
Dry 6

MUSKOGEE COUNTY

17-15-18 S. Drew, Hoover Bros. 1 ..... gas
35-15-18 Townsite, C. E. Creager 2 ... dry
31-12-9 Lacey, I. T. I. Oil Co. 1 .... gas
8-13-16 H. Lewis, Robinson Bros. 7 .. dry
18-12-19 Kerr, A. Deagan 1 ..... dry
3-11-19 West, J. V. Dunbar 1 ..... dry
9-15-18 Spaulding, J. M. Foltz 5 20
Sango, Hale & Reynolds 2 ... dry
17-15-18 M. Sango, M. S. Mussellem 1. dry
14-13-18 Foreman, J. P. Flannagan 4. dry
27-16-15 C. Rowe, Mack Drlg. Co. 1... dry
8-15-15 M. Barnett, Babcock Bros. 8. 37
8-15-18 L. Bemo, E. B. Grubbs et al 1 gas
17-15-18 M. Sango, M. S. Mussellem 1. dry
18-14-17 H. James, Beland Oil Co. 10.. 200
35-12-19 C. Sheppard, G. M. Gillespie 1 dry
15-11-19 G. Springer, T. B. Mathers 1 dry

Wells completed 17
Production 267
Dry 11
Gas 3
Gas production 3,350,000

OKFUSKEE COUNTY

23-11-11 Adams, Barode Oil Co. 3 10
13-10-11 Fields, Wells et al 2 20
22-12-11 Wilson, Sunray Oil Corp. et al 4 75
25-11-11 Barnett, Pure Oil Co. 4 ..... gas

Wells completed 4
Production 105
Gas 1
Gas production 7,000,000

OKLAHOMA COUNTY

35-12-3w Page, Wirt Franklin Pet. Corp. 4 ..... *2707
1-11-3w Phillips, I. T. I. Oil Co. et al 1 ..... *11,055
2-11-3w Theimer, Wirt Franklin Pet. Corp. 12 ..... *3863
10-11-3w Harrison, Thomas B. Slick Oil Co. 1 ..... *1895
11-11-3w Coppinger, I. T. I. Oil Co. et al 3 ..... *523
Corff, I. T. I. Oil Co. et al 2. *812
Ferndale Community, I. T. I. Oil Co. et al 5 ..... *2548
C. Funk, I. T. I. Oil Co. et al 1 ..... *6036
Starkey, I. T. I. Oil Co. et al 2 ..... *4202
12-11-3w Lowery, Wirt Franklin Pet. Corp. 10 ..... *10,300
Lowery, Wirt Franklin Pet. Corp. 1 ..... *3597
14-11-3w Carrico, I. T. I. Oil Co. et al 4 ..... *3670
Carrico, I. T. I. Oil Co. et al 5 ..... *1407
23-11-3w Mary Unsell, I. T. I. Oil Co. et al 5 ..... *740
24-11-3w Olds, Coline Oil Co. 3 541
31-11-2w Vencl, Sinclair O. & G. Co. 13 ..... *429
Jones, I. T. I. Oil Co. et al 14 19,614
1-11-3w Baker, Thomas B. Slick Oil Co. et al 5 ..... *6547
2-11-3w Harris, Ghant-Garvin 1 2426
Harrell, Independent O. & G. Co. 1 2335
Wright, Wirt Franklin et. Corp. 3 18,578
Smith, Wright & Smith 1. 11,945
10-11-3w Clemer, Blackwell O. & G. Co. et al 1 ..... *3080
12-11-3w Trosper Park, Cromwell-Franklin Oil Co. 26 7014
Theimer, I. T. I. Oil Co. et al 7 ..... *1383
15-11-3w Ivanhoe Addition, I. T. I. Oil Co. et al 1 ..... *4189
6-10-2w Reynolds, I. T. I. Oil Co. et al 1 168
32-11-2w Sigmon, Phillips Pet. Co., T. B. Slick and Prairie 3.... *1595
2-11-3w Dillon, Skelly Oil Co. et al 1 *4437
Birg, Wirt Franklin Pet. Corp. 1 ..... *2546
10-11-3w Tanner, Skelly Oil Co. and Heenan & Coe 1 6257
11-11-3w Corff, I. T. I. Oil Co. et al 3.. 965
M. Lawton, I. T. I. Oil Co. et al 1 ..... *1721
E. Precure, I. T. I. Oil Co. et al 1 ..... *4228
Theimer - Butterfield, Wirt Franklin Pet. Corp. 1 ....*2,355
23-11-3w E. Williams, Wirt Franklin Pet. Corp. 1 5353
25-11-3w Johnson, I. T. I. Oil Co. 9...*2066
35-12-3w Page, Wirt Franklin Pet. Corp. 5 ..... *6502
Oklahoma State, I. T. I. Oil Co. 7 ..... *5440
31-11-2w Mary Sudik, I. T. I. Oil Co. et al 1 30978
3-11-3w Wyatt, Century Pet. Co. 1...8688
Vinita Park, J. C. Shaffer 1.†5495
Danruether, Thomas B. Slick Oil Co. & Atkinson 1 1128
10-11-3w Barr, Century Pet. Co. 1 ...20,328
11-11-3w Coppinger, I. T. I. Oil Co. et al 4 ..... *1877
Coppinger, I. T. I. Oil Co. et al 6 ..... *2325
Coppinger, I. T. I. Oil Co. et al 8 ..... *2298
12-11-3w Trosper Park, Cromwell-Franklin Oil Co. 31 .....†3057
13-11-3w Trosper Park, Cromwell-Franklin Oil Co. 30 .....†1870
14-11-3w Carrico, I. T. I. Oil Co. et al 3 ..... *8591
Hugh Trosper, I. T. I. Oil Co. et al 5 ..... †1118
15-11-3w Spanagler, I. T. I. Oil Co. et al 1 ..... †5805
36-11-3w Oklahoma State, I. T. I. Oil Co. et al 8 ..... †6359
31-11-2w Sudik, I. T. I. Oil Co. et al 5. 666
Sudik, I. T. I. Oil Co. et al 6.†6898
35-12-3w M.-K.-T., I. T. I. Oil Co. 3..†3136
2-11-3w Orphanage, Anderson & Prichard 1 2650
Jefferson, Century Pet. Co. 1 ..... ‡16,178
Olafson, Ghant & Garvin 1..†3842
Key, Thomas B. Slick Oil Co. & Atkinson 2 .....†930
10-11-3w Wheeland, I. T. I. Oil Co. et al 1 ..... *7225
Frost, Thomas B. Slick Oil Co. 1 ..... *2404
11-11-3w Coppinger, I. T. I. Oil Co. et al 7 ..... *1690
12-11-3w Trosper Park, Cromwell-Franklin Oil Co. 20 .....*15,522
14-11-3w Habegger, I. T. I. Oil Co. et al 1 ..... *7030
15-11-3w Harvey, Denver Prod. & Ref. Co. et al 2 8544
3-11-2w Lawton, Ryan Consolidated Oil Co. 1 ..... dry
18-11-2w Banta, Thomas B. Slick Oil Co. 1 ..... dry
Banta, Thomas B. Slick Oil Co. 2 ..... dry

Wells completed 69
Production 351,751
Dry 3

*Sixteen hours production, †Eight hours production, ‡Fifteen hours production. All others are 24 hours production.

OKMULGEE COUNTY

14-14-14 Z. Colbert, F. D. Misener 4... 12
20-12-13 Burgess, Rossiter Oil Co. 5 .. gas
23-15-12 Cornelius, Clarmont Oil Co. 1 dry
1-12-13 Bradford, W. B. Fine 1 ..... gas
20-16-14 Mayfield, Trout Drlg. Co. 6-A dry
24-16-13 Brown, McDonald et al 1 ... gas
Tiger, McDonald et al 2 .... gas
20-12-13 A. Burgess, Rossiter Oil Co. 6 gas
24-16-13 Wolfe, McDonald et al 1 150
9-15-13 Brown, Kirkland & Son 2 12

Wells completed 10
Production 174
Dry 2
Gas 5
Gas production 32,000,000

OSAGE COUNTY

6-26-12 I. T. I. Oil Co. 436 ..... gas
10-21-8 A. G. Oliphant 2 100
11-21-8 Turman Oil Co. 1 ..... dry
30-25-8 The Texas Company and The Prairie O. & G. Co. 8 35
10-25-9 Smith, Leahy et al 1 ..... dry
22-24-7 The Texas Company 1 20
29-21-11 Oklahoma Natural Gas Corp. 1809 ..... dry
31-25-8 The Prairie O. & G. Co. 7 ... 50
22-27-11 Peters Pet. Corp. and Producers & Refiners Corp. 1.. dry
15-25-12 I. T. I. Oil Co. 436 ..... gas
36-24-8 I. T. I. Oil Co. 439 ..... gas
13-23-8 Corona Oil Co. 19 ..... dry
20-25-9 Winona Oil Co. 7 35
28-26-6 Vacuum Oil Co. 6 190
11-26-8 Peters Pet. Co. & Prod. & Ref. Corp. 4 25
5-23-9 Continental Ref. Co. & The Prairie O. & G. 5 790
15-21-8 J. E. Madden 1 ..... dry
30-25-8 The Prairie O. & G. Co. 9 100

Wells completed 18
Production 1345
Dry 6
Gas 3
Gas production 14,700,000

PAWNEE COUNTY

2-20-8 Kinney, Williams et al 1 ... 10
7-20-8 Martin, Nadine Oil Co. 6 .... dry
26-20-9 Copeland, Hay et al 7 40
2-20-6 Newell, Magnolia Pet. Co. 1.. dry
14-20-9 Mote, Thompson & Black 3-A 12
24-21-7 Moore, Peter Adamson, Jr., 1-A 25
22-20-5 Jones, J. M. Scott et al 1 ... dry
13-20-9 Jameson, C. O. Buckles et al 1 ..... dry
29-20-9 Russell, Thompson & Black 1. dry
14-20-9 McCollum, Glass et al 1 ..... gas

Wells completed 10
Production 87
Dry 5
Gas 1
Gas production 2,500,000

PONTOTOC COUNTY

28- 5-5 Jacobs, Benedum-Trees Oil Co. 2 35
30- 5-5 Malley, Empire O. & R. Co. 1 46
31- 4-7 Hardin, Boucher et al 1 .... dry

Wells completed 3
Production 81
Dry 1

POTTAWATOMIE COUNTY

8- 9-5 Townsite, Clark & Cowden 2. dry
17- 8-5 Ogee, The Texas Company et al 1 100
24- 7-4 Coley, J. H. Gwin et al 2 ... 370
23- 6-3 Warren, Wilcox O. & G. Co. 5 195
Gibson, Deep Rock Oil Corp. 1 524
Archer, Gypsy Oil Co. 2 385
Gregg, I. T. I. Oil Co. 2 248
Tomlin, The Prairie O. & G. Co. 7 1861
Davidson, I. T. I. Oil Co. 5 ...2077
Tomlin, The Prairie O. & G. Co. 3 345
Tomlin, The Prairie O. & G. Co. 6 2510
3- 8-3 Knight, The Texas Company. dry
14- 6-3 Archer, Mid-Continent Pet. Corp. 1 2725
23- 6-3 Horn, Gypsy Oil Co. 1 2909
Gibson, Deep Rock Oil Corp. 2 2472
Alexander, Empire O. & R. Co. 1 165
Warren, H. F. Wilcox O. & G. Co. 6 1471
Fugate, Blackwell O. & G. Co. 1 100
26- 6-3 White, Continental Oil Co. 1. 185
23- 6-3 Tomlin, The Prairie O. & G. Co. 2 ..... dry

Wells completed 20
Production 18,642
Dry 3

SEMINOLE COUNTY

2- 8-5 Coker, Carter Oil Co. 6 2250
19- 7-8 Fish "D," Empire O. & R. Co. et al 1 1000
20- 6-6 Cheparney, W. B. Pine 4 ... 470
28- 6-6 Caesar, Crosbie & Moran 1.. dry
11- 9-6 Community-Amerada, Carter Oil Co. et al 2 ..... dry
14- 9-6 Mayhue, The Texas Company 5 ..... dry
20- 6-6 Harjo, Mid-Continent Pet. Corp. 7 855
29- 6-6 Fleet, Haris et al 1 840
29- 6-6 Wood, Magnolia Pet. Co. 1 ..3200
2- 8-5 Rogers, Carter Oil Co. 4 520
Hyde, The Prairie O. & G. Co. 1 1195
3- 8-5 Hassman, The Prairie O. & G. Co. 1 1565
20- 6-6 Harjo, Gypsy Oil Co. 3 1040
12- 5-7 Mathis, Sunray Oil Co. 2 275
2- 8-5 Coker, Gypsy Oil Co. 4 1435
30- 8-8 Henshaw, Burke-Greis Oil Corp. 1 ..... Gas
35- 7-5 Whisenhunt, Hilton Phillips 1 dry
17- 6-8 Patten, Burke-Greis Oil Corp. 1 ..... dry
2- 8-5 Hyde, The Prairie O. & G. Co. and T. B. Slick 2 1400
7- 5-8 Harjo, Producers & Refiners Corp. 3 20

Wells completed 20
Production 16,065
Dry 5
Gas 1
Gas production 12,000,000

STEPHENS COUNTY

16-1s-8w Broadbent, Sykes et al 2 20
23-2s-6w Farris, Magnolia Pet. Co. 7.. 4
27-2s-7w Dilley, Pace et al 2 216

Wells completed 3
Production 240

WAGONER COUNTY

26-17-15 Bird, F. Lousing 1 ..... dry
34-17-16 Carter, William La Pierre 1.. gas
12-17-17 Darnst, Brasheers et al 1 ... dry
31-17-17 Cruel, F. E. Webb et al 1 ... dry
35-17-17 Weldon, Omega Oil Co. 2 .... dry
36-16-18 Perryman, O. A. Reed 1 .... dry
35-16-17 Vernor, Cherokee Public Service Co. 1 ..... dry
31-19-16 Replogle, Bailey et al 1 .... gas
22-17-16 Lovett, J. W. Edwards et al 1 20
12-17-17 Darnell, Brasheers et al 2 ... dry
6-16-16 Harris, George Longacre et al 1 ..... dry
15-19-15 Marshall, Mays Drlg. Co. 5.. 8
19-18-16 H. Drew, J. H. Striker 4 .... dry
23-18-16 Childers, W. B. Pine 2 ..... dry
34-18-17 Barnett, Western D. & E. Co. 5 ..... gas
22-16-19 Vann, C. F. Finefield 9 7

Wells completed 16
Production 35
Dry 10
Gas 3
Gas production 5,497,000

MISCELLANEOUS COUNTIES

Beckham County—

27- 9-22w Franklin, Ramsey Pet. Co. et al 1 ..... gas
29-10-22w Brower, J. F. Cuniff et al 1.. dry
20- 8-22w Denby, Carson et al 1 ..... dry

Comanche County—

29-2-10w Brown, Ashcroft & Ponder 1.. 2

Caddo County—

31-6-9w Gregory, Magnolia Pet. Co. 4... 15
Berry, English Drlg. Co. 1.... 17
2-5-9w Surbeck, Mid-Kansas O. & G. and Ramsey Pet. 2 130
11-5-9w Hedlind, Magnolia Pet. Co. 5.. gas

Cherokee County—

8-14-21 Benge, Weaver & Proctor 1.. dry

Cleveland County—

6-10-2w Reynolds, Phillips Pet., T. B. Slick and the Prairie 1 ... dry
5-10-2w Sudik, the Prairie O. & G. Co. 1 ..... dry

Garfield County—

24-23-4w Thorp, Continental Oil Co. 1.. dry

Garvin County—

5-3-4w Carson estate, McMinn & Arrowsmith 1 ..... dry
10-4-3 Stricklin, C. R. Obermeyer 1.. dry

Grady County—

36-4-5w Kinnard, Meridian Gas Co. 1.. gas

Harper County—

14-26-24w Howell, Sinclair, O. & G. Co. 1 gas

Latimer County—

1-6-22 Morrison, Le Flore County G. & E. Co. RO-14 ..... gas
1-6-22 Morrison, Le Flore County G. E. Co. RO-14 ..... gas

Logan County—

21-18-4w Knecht, Blackwell O. & G. Co. 1 35

McIntosh County—

34-12-14 M. Williams, Deep Fork Oil Co. 1 ..... dry
J. Williams, Deep Fork Oil Co. 2 ..... gas

Payne County—

30-18-5 Driggs, Comall Oil Co. 1 5
9-18-5 Harris, Deep Rock Oil Corp. 2 gas
9-17-5 Hermanstofer, Mote & Wheeler 1 ..... dry

Pittsburg County—

11-7-13 Koehler, Central States Power & Light Co. 1 ..... gas

Texas County—

18-6-15ecm Parker, Argus Prod. Co. 1.. gas

Noble County—

4-24-1w Frederick, Weaver & Craign 1 dry
4-20-1w Fraler, Empire O. & R. Co. 1 gas
5-20-1w Smyser, Prairie O. & G. Co. 1 gas

Lincoln County—

17-14-4 Wagner, Magnolia Pet. Co. 2.. dry
5-14-6 Ryan, Atlantic O. P. Co. 1 ... dry

Tulsa County—

36-19-13 McKay, H. Breen et al 1 .... dry
33-18-14 Ralkey, Ohio Oil Co. 1 15

Wells completed 33
Production 219
Dry 14
Gas 12
Gas production 164,760,000

KANSAS FIELDS

KANSAS FIELDS
Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Butler	5	540	2	0
Cowley	6	542	4	0
Greenwood	15	493	6	0
McPherson	7	7,297	1	2
Reno	4	0	3	1
Rice	4	0	4	0
Sedgwick	16	7,308	6	0
Stevens	23	0	1	22
Miscellaneous	31	970	18	4
Total October	111	17,150	45	29
Total September	117	11,799	46	35
Difference	6	5,351	1	6

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Barber	2	2	4
Barton	1	2	3
Bourbon	1	0	1
Butler	1	12	13
Chautauqua	0	1	1
Clark	0	1	1
Clay	0	1	1
Coffey	1	1	2
Cowley	0	10	10
Dickinson	0	1	1
Douglass	0	1	1
Edwards	0	2	2
Elk	0	2	2
Ellis	0	5	5
Ellsworth	1	3	4
Foard	0	2	2
Franklin	0	1	1
Geary	0	1	1
Greenwood	2	14	16
Gove	0	2	2
Graham	0	2	2
Grant	0	1	1
Harper	0	2	2
Harvey	3	3	6
Kingman	0	2	2
Kiowa	0	2	2
Lyon	0	2	2
McPherson	6	11	17
Marion	3	1	4
Morris	3	2	5
Morton	0	1	1
Norton	1	0	1
Osage	0	1	1
Pawnee	0	1	1
Pratt	0	1	1
Rawlins	1	0	1
Reno	0	3	3
Rice	3	12	15
Rooks	0	2	2
Rush	1	2	3
Russell	0	6	6
Saline	0	1	1
Sedgwick	3	27	30
Seward	0	1	1
Sheridan	0	1	1
Stafford	0	2	2
Stanton	0	1	1
Stevens	4	13	17
Sumner	2	6	8
Trego	0	1	1
Washington	0	1	1
Woodson	1	1	2
Total October	40	176	216
Total September	30	215	245
Difference	10	39	29

WELLS COMPLETED
BUTLER COUNTY

6-27-4 Newcomb, Sullivan et al 1..... dry
22-26-3 Osborne, Gypsy Oil Co. 1..... dry
6-27-4 Anderson, E. W. Marland, Inc. 1 300
22-27-5 Brandenberger "A," Empire O. & R. Co. 10..... 225
22-27-5 Hollenbaugh, Austin et al 1.... 15

Wells completed 5
Production 540
Dry 2

COWLEY COUNTY

4-31-3 Denton, Minnehoma Oil Co. 1.. dry
19-32-5 Zeien, Prairie O. & G. Co. 2.... 42
12-32-4 Brant, Roth & Faurot 1..... 500
7-31-6 Harris, Prairie O. & G. Co. 1.. dry
12-32- 4 Brant, Roth & Faurot 1-A..... dry
19-33-6 Jarvis, Hall et al 1..... dry

Wells completed 6
Production 542
Dry 4

GREENWOOD COUNTY

19-22-11 Harris, Aladdin Oil Co. and Phillips Pet. 2..... 75
20-25-10 Loy, Harwood Oil Co. 1..... dry
28-23-11 Beal, Phillips Pet. Co. 6..... 200
11-24-12 Hout, Mid-Continent Pet. Co. 6 20
17-24-13 Allis, Shull Drlg. Co. 3..... 15
24-26- 9 Weirshing, Beacon Oil Co. 7... 10
19-22-11 Greenwood, Simmons et al 4... 50
22-22-13 Wasson, Empire O. & R. Co. 2. 25
13-23- 9 Spain, Aladdin Pet. Co. and Phillips Pet. 1 ..... dry
28-25-13 Ford, O'Neil et al 1..... dry
21-26- 9 Lowery, International Oil Co. 2 50
34-22-11 Hess, O'Neil et al 3..... dry
1-24-11 Newhouse, Prairie O. & G. 8 48
26-22-10 Andrews, Leader et al 1..... dry
36-23-11 Patterson "A," Empire O. & R. Co. 5 ..... dry

Wells completed 15
Production 493
Dry 6

McPHERSON COUNTY

7-20-1w Winn, Tom Palmer et al.....3310
33-20-2w Stucky, Gypsy Oil Co. 1..... 330
12-20-2w Munn, The Texas Co. 3352
6-20-1w Ritz, Palmer and Larlo et al 1 305
13-19-2w Lovett, McPherson O. & G. Dev. Co. et al 1..... gas
15-19-2w Lindberg, McPherson O. & G. Dev. Co. et al 1..... gas
17-18-2w Johnson, Ben Gurley et al 1.. dry

Wells completed 7
Production 7297
Dry 1
Gas 2
Gas production 29,115,000

RENO COUNTY

4-22-10w Houston, United Pet. et al 1 dry
14-26-5w Horsch, Palmer and Phillips Pet. Co. 1 ..... dry
1-23- 4w Haury, E. L. Study et al 1... gas
6-26- 7w Stevens, M. M. Valerius et al 1 dry

Wells completed 4
Dry 3
Gas 1
Gas production 23,000,000

RICE COUNTY

35-20- 9w Koch, Gypsy Oil Co. 1..... dry
10-19-10w Brandenstein, Solar Oil Co. et al 1 ..... dry
16-21-10w Boy, Boucher Oil Co. 1..... dry
22-20-10w Loesch, Tatlock et al 1..... dry

Wells completed 4
Dry 4

SEDGWICK COUNTY

19-27-2 Trustee, Fisher & Lauck 4.....1200
Trustee, Fisher & Lauck 5.....1300
2-27-2 Baily, W. E. Newman, Inc. 1... dry
18-27-2 Murdock, National Ref. Co. 1... 680
19-27-2 Eastborough "A," Derby Oil 1.. 185
Eastborough, Derby Oil Co. 3.. 515
3-27-2 Shaffer, Blankenship Pet. Co. 2. 600
25-27-1 Christman, Aladdin Pet. et al 1 dry
19-27-2 Trustee, Fisher & Lauck 6..... 650
20-27-2 Rimal, E. F. Jones et al 1..... dry
15-26-2 Lygrisse "A," Shell Pet. Corp. 3 dry
17-27-2 Wheeler, Magnolia Pet. Co. 1... 728
19-27-2 Eastborough, Derby Oil Co. 2..1350
30-27-2 Keys, Vickers Pet. Co. 3..... 100
6-28-2 Braley Airport, Six Forty Oil 1 dry
30-27-2 Turner, Prod. & Ref. Corp. 1... dry

Wells completed 16
Production 7308
Dry 6

STEVENS COUNTY

4-31-37w Parsons, Mo. Kans. Gas Co. et al 1 ..... gas
36-33-38w Crawford, Mo. Kans. Gas Co. et al 1 ..... gas
33-33-37w Sherwood, Argus Prod. Co. 2. gas
7-34-38w Ratcliff fee, Argus Prod. 2... gas
Ratcliff fee, Argus Prod. 1... gas
16-34-38w Kelly, Mo. Kans. Gas Co. 1.. dry
27-34-37w Redpath, Argus Prod. Co. 1.. gas
29-34-37w Gibbons, Argus Prod. Co. 1. gas
4-35-37w Wiley, Argus Prod. Co. 1.... gas
9-35-37w Hedrick, Argus Prod. Co. 1.. gas
30-32-37w Hoon, Argus Prod. Co. 1..... gas
12-32-38w Ellis, Argus Prod. Co. 1..... gas
8-33-37w Ratcliff, Argus Prod. Co. 2.. gas
23-33-37w Bunyan, Argus Prod. Co. 1.. gas
5-34-38w Forward fee, Argus Prod. 1. gas
7-34-38w Ratcliff fee, Argus Prod. 3. gas
7-34-36w E. Jester, Argus Prod. Co. 1. gas
18-35-38w Moore, Argus Prod. Co. 1... gas
34-32-39w Dan Sullivan, Western Prod. Co. 1 ..... gas
31-32-38w W. J. Davis, Argus Prod. 1. gas
1-32-38w Olsen, Argus Prod. Co. 1.... gas
34-32-38w Crawford, Mo.-Kans. P. L. Co. et al 1 ..... gas
1-35-38w Beavers, Rosenthal and Pioneer Pet. Co. 1 ..... gas

Wells completed 33
Dry 1
Gas 22
Gas production 112,262,781

MISCELLANEOUS COUNTIES

Barber County—

23-33-13w Angel, Barbara Oil Co. 2..... gas
11-32-10w Powell, Phillips Pet. Co. 1... dry
24-33-13w Hamblin, Barbara Oil Co. 1.. gas

Dickinson County—

9-12-1 Whitehair, Morgan et al 1..... dry

Coffey County—

35-21-13 Hatch, Prairie O. & G. Co. 1.. 80
20-22-15 Wood, McGregory et al 1..... dry
29-23-15 Guy "B," Spencer and Derby Oil Co. 2 ..... dry
32-22-15 Hay, Roberts et al 1..... dry

Elk County—

8-29- 9 Morgan, Flemming et al 1..... 200
26-31-10 Key, Craft & Frazier 1..... 20

Chautauqua County—

5-33- 9 Garr, Leighty et al 1..... gas
1-32-10 Oliver, Griffin & Bell 8..... 50
5-33- 9 Helmick, Leighty et al 1..... dry

Ellis County—

4-15-20w Gatewood, Barefield et al 1. dry
6-12-17w Karelin, Phillips Pet. Co. 1.. 280
32-11-17w Kessler, Phillips Pet. 1..... 80

Franklin County—

34-15-18 Brown, Empire O. & R. Co. 1. gas

Kingman County—

36-29-6w Wetherall, Slick Pryor and Lockhart 1 ..... dry

Marion County—

14-17-4 Riffell, Youkers and Phillips Pet. 1 75
6-17-1 Hacker, Arkansas Fuel Oil and Dixie Oil 1 ..... dry
15-17-4 McNichol, Stearns & Streeter 1. 75

Rush County—

2-18-16w Ertel, Flynn et al 1..... dry
24-17-16w Brock, McPherson O. & G. 1 dry

Sumner County—

32-31-1w Frankum, Carter Oil Co. 1... 110
36-31-2 Boyer, Schwartz et al 1..... dry

Russell County—

8-14-15w Schwartz, Allison & Fitzwilliams 1 ..... dry

Woodson County—

29-23-15 Guy, Derby Oil Co. et al 2..... dry

Graham County—

27-8-25w St. John, Gulf Coast et al 2.. dry
St. John, Gulf Coast et al 3.. dry
St. John, Gulf Coast et al 4.. dry
St. John, Naylor, DeCosta et al 5 ..... dry

Wells completed 31
Production 970
Dry 18
Gas 4
Gas production 18,000,000

PANHANDLE FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carson	10	467	1	6
Gray	26	11,456	3	0
Hutchinson	7	490	2	2
Roberts	1	0	1	0
Wheeler	6	10	1	4
Total October	50	12,423	7	12
Total September	68	12,264	10	22
Difference	18	159	3	10

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drlg.	Ttl.
Carson	6	1	4	11
Gray	22	8	49	79
Hutchinson	3	6	8	17
Moore	4	1	5	10
Wheeler	1	3	3	7
Miscellaneous	2	8	1	11
Total October	38	27	70	135
Total September	36	30	75	141
Difference	2	3	5	6

WELLS COMPLETED
CARSON COUNTY

S. B. Burnett, Empire G. & F. Co. 27.. gas
S. B. Burnett (Sec. 97), North American O. & G. Co. 1..... gas
C. B. Martin, Reiger & Stekol 1..... gas
W. H. Fuqua, Empire G. & F. Co. 4.... gas
N. S. Locke, Sweney et al 1..... dry
J. C. McConnell, Empire G. & F. Co. 1. gas
F. E. Percival, Hutchinson County Drlg. Co. 3 100
J. E. Duncan, Shamrock O. & G. Co. 1. gas
E. Cooper (Shell), Stubblefield et al 2. 125
B. F. Block, Gulf Prod. Co. 3..... 242

Completions 10
Production 467
Dry holes 1
Gas wells 6

GRAY COUNTY

Davis, Mordyan O. & G. Co. 3..... dry
Morse, Tedesco, Bell et al 1..... 265
McLaughlin, Champlin Ref. Co. 5..... 60
Baer, Cockrell-McIlroy Oil Co. 1..... 138
Sullivan, Graham et al 1.....5000
Harrah, Wild et al 1..... 155
J. M. Saunders, trustee-A, Gulf Prod. 6. 240
Thompson, Anderson & Bean 1..... 480
Cobb, Midwest Explin. Co. 1..... 100
Harrah, Operators Royalty & Prod. Co. 3 250
Harrah, The Texas Co. 4..... 432
Morse-B, Dunlop 6..... 384
Smith, British American and Shell 3... 572
McLaughlin, Champlin Ref. Co. 5..... 150
Catlin et al, Danciger O. & R. Co. 1... 330
McConnell, Dye & Gillette 1..... 750
Sailor, Magnolia Pet. Co. 1..... 209
Harrah, Operators Royalty & Prod. Co. 7 dry
R. B. Thompson et al, Gulf Prod. Co. 1 125
Morse-A, Parton et al 1..... 300
Reynolds, Atlantic O. P. Co. 1..... 350
Crown, Continental Oil Co. 1..... 150
Smith, Delmar Oil Co. 2..... 400
Vaughan, Southern Pet. Exp. Co. 2..... 50
Smith, British-American O. P. Co. and Shell 4 313
Harrah, Operators Royalty & Prod. Co. 4 350

Completions 26
Production 11,456
Dry holes 2

HUTCHINSON COUNTY

Johnson Bros.-B, Plains Holding Co. and Haby 1 ..... gas
W. S. Christian, Huber Prod. Co. 1..... 75
W. E. Herring, Phillips Pet. Co. 1..... gas
Johnson Bros.-B, Sinclair O. & G. Co. 1. dry
J. W. Moore, Timms et al 2..... 175
J. M. Sanford-A, Gulf Prod. Co. 2..... dry
Johnson Bros., Combination O. & G. 1.. 240

Completions 7
Production 490
Dry holes 2
Gas wells 2

ROBERTS COUNTY

Lederick et al, Big Bend Oil Co. 1..... dry

WHEELER COUNTY

Hanes, Murchison & Fain 1..... dry
Purcell, Lone Star Gas Co. 1..... gas
Worley, Magnolia Pet. Co. 2..... 10
Brown, Murchison & Fain 1..... gas

Williams & Laycock, Upham Gas Co. 2. gas
Close, Murchison & Fain 20..... gas

Completions 6
Production 10
Dry holes 1
Gas wells 4

NORTH CENTRAL TEXAS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Archer	17	90	13	0
Baylor	1	0	1	0
Brown	4	5	1	2
Callahan	7	10	4	1
Clay	3	90	1	0
Coleman	9	496	7	0
Cooke	9	313	3	0
Donton	1	0	1	0
Eastland	7	65	2	3
Erath	2	0	0	2
Jack	1	0	1	0
Montague	3	22	3	0
Palo Pinto	6	22	2	2
Parker	1	0	1	0
Shackelford	5	30	2	1
Stephens	7	316	2	2
Throckmorton	10	14	3	0
Wichita	5	112	2	0
Wilbarger	2	35	1	0
Young	55	853	46	0
Total October	155	2,473	100	13
Total September	156	2,352	102	7
Difference	1	879	2	6

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drlg.	Ttl.
Archer	15	18	11	44
Brown	2	9	5	16
Callahan	1	4	1	6
Coleman	4	8	18	30
Cooke	2	6	4	12
Clay	0	4	0	4
Eastland	3	8	9	20
Erath	0	4	2	6
Jack	1	1	4	6
Montague	0	3	2	5
Palo Pinto	5	9	6	20
Shackelford	4	1	6	11
Stephens	1	4	3	8
Throckmorton	1	3	3	7
Wichita	3	7	5	15
Wilbarger	0	12	2	14
Young	18	36	34	88
Miscellaneous	2	27	9	38
Total October	62	164	124	350
Total September	48	121	146	315
Difference	14	43	22	35

WELLS COMPLETED

ARCHER COUNTY

Coleman, H. H. Fraser 1..... dry
Netherton, Paul Trahan et al 1..... dry
Bell, John Brownlee 1..... dry
Brezina et al, Flowers & Barkley et al 1 dry
Porter, H. P. Key 1..... dry
Terrell, A. P. Nicholson 1..... dry
Richardson, Beard & Hammon 1..... dry
Bell-A, Flake & Harmon 1..... 32
Richardson, Golding-Cochran 1 22
Turbeville, J. C. Hickernell 1..... 22
Bloodworth, The Texas Co. 1..... dry
Snider, Panhandle Ref. Co. 1..... dry
A. J. Lowe, T. F. Hunter et al 1..... dry
Green, Electra-Archer Oil Co. 1..... dry
Abercrombie, A. Minnich 1..... dry
Threet, M. Staniforth 1..... dry
Pace, C. E. Starr et al 1..... 12

Completions 17
Production 90
Dry holes 13

BAYLOR COUNTY

Portwood-H, Fain-McGaha Oil Corp. 1.. dry

BROWN COUNTY

Carmichael, E. L. Smith Oil Co. 1..... gas
Shields, Eppenauer Drlg. Co. 1..... 5
Crothers & Smith, Snellers et al 1..... gas
Ehrke, Beasley et al 1..... dry

Completions 4
Production 5
Dry holes 1
Gas wells 2

CALLAHAN COUNTY

Finley-B, Star Drilling Co. 2 1
Biggerstaff, F. M. Taylor 2 ..... dry
E. D. Henderson, Neeb & Wilson 1 ... dry
Jackson-D, Drew Beams 3 9
E. Cook, Guffey et al 1 ..... dry
E. L. Finley-C, Star Drilling Co. 2 .... gas
Wilson, Bradstreet & Holden 1 ..... dry

Completion 7
Production 10
Dry holes 4
Gas wells 1

CLAY COUNTY

Stine et al-A, Mid-Continent Holding Corp. 8 30
A. H. Myers, Grosby Oil Co. 2 ..... dry
Stine et al-A, Mid-Continent Hold. Co. 9 60

Completions 3
Production 90
Dry holes 1

COLEMAN COUNTY

Bartholomew, Lloyd Oil Corp. 15 130
Gates, Yingling et al 1 ..... dry
J. B. Turner, Joines et al 1 ..... dry
S. E. Switzer, Smith et al 4 ..... dry
F. Golson, Brown, Ekholm et al 1 366
R. O. McClure, Roberts Oil Corp. and Atlantic O. P. Co. 1 ..... dry
Baker, F. A. Lane 1 ..... dry
Henderson, Whitesides et al 1 ..... dry
Reaves, Midland Oil Co. & Wright 1 ... dry

Completions 9
Production 496
Dry holes 7

COOKE COUNTY

Bugg, Deep Rock Oil Corp. of Tulsa 1 .. 2½
Carpenter, W. A. Graves 1 ..... dry
Perkins, Deep Rock Oil Corp. and Faith Oil Corp. 1 8
Dennis-B, A. V. Grant et al 2 36
J. T. McDonald, Gulf Prod. Co. 1 ..... dry
Perkins, Deep Rock Oil Corp. and Faith Oil Corp. 2 70
Dennis, A. J. Erlewine 3 29
Dennis, Pet. Prod. and United Prod. Co. 2 ..... dry
Jacobs, W. B. Hamilton et al 1 168

Completions 9
Production 313
Dry holes 3

DENTON COUNTY

Freeman, Deep Rock Oil Corp. of Tulsa 1 ..... dry

EASTLAND COUNTY

Dunham, Groce et al 1 15
Allen-C, T. P. Coal & Oil Co. 1 ..... dry
Hitson, Warner-Quinlan Co. 1 ..... gas
Good-A, Belva Oil Co. 1 50
Whitesides, Humble O. & R. Co. 2 ..... gas
Pulley, Lone Star Gas Co. 1 ..... dry
Chesley-A, Southern O. & P. Co. et al 2 gas

Completions 7
Production 65
Dry holes 2
Gas wells 3

ERATH COUNTY

Mauldin, C. C. Peters et al 1 ..... gas
Smith, Peters et al 2 ..... gas

Completions 2
Gas wells 2

JACK COUNTY

Leffel-A, Panhandle P. & R. Co. 3 .... dry

MONTAGUE COUNTY

Salmon-E, Bridwell Oil Co. 1 ..... dry
Cunningham et al, Carter & Rycade 14. 22
Lemons-B, Lesh & McCall 1 ..... dry

Completions 3
Production 22
Dry holes 2

PALO PINTO COUNTY

Allen & Richie, Christie Bros. 2 ..... dry
M. B. Costello, Root & Rhodes 3 10
T.&P.R.R. Co., Lasater et al 1 ..... gas
McDonald, Gordon & Gholson 3 ..... gas
Sleigh, Brazos River Gas Co. 1 12
Costello, Mook Texas Oil Co. 1 ..... dry

Completions 6
Production 22
Dry holes 2
Gas wells 2

PARKER COUNTY

Davis, Waters Drlg. Co. 1 ..... dry

SHACKELFORD COUNTY

Mitchel, Coleman, Stiles et al 1 ..... dry
Casey, Howsely et al 1 10
Reynolds Land & Cattle Co., Meridian Oil Co. 1 20
Nail, Carter Dev. Co. 1 ..... dry
Cook-A, Roeser & Pendleton, Inc., 89.. gas

Completions 5
Production 30
Dry holes 2
Gas wells 1

STEPHENS COUNTY

Elliott, Lone Star Gas Co. 2 256
Lee, T. P. Coal & Oil Co. 5 ..... gas
Bruce, J. Price 1 35
Riddle, Urban et al 1 25
W. E. Smith,, Lyman et al 1 ..... gas
Hudspeth, Rhodes & Highers 1 ..... dry
Walker-B, Texas Cons. Oil Co. 1 ..... dry

Completions 7
Production 316
Dry holes 2
Gas wells 2

THROCKMORTON COUNTY

J. C. Irwin, C. F. Corzelius 1 ..... dry
M. E. Conger, Brihill Oil Corp. 1 ..... dry
McKeichan, Seitz, Comegys & Seitz 1 .. 8
Reynolds Land & Cattle Co., T. B. Slick et al 1 ..... dry
D. McKeichan, Edwards & Moore 1 ... dry
R. W. Kelley, Hannah & Williams 1 ... dry
D. McKeichan, Mosley et al 1 6
D. McKeichan, L. V. Ulray 1 ..... dry
D. McKeichan (1,641), L. V. Ulray 1 ... dry
McKeichan, Seitz, Comegys & Seitz 2 .. dry

Completions 10
Production 14
Dry Holes 8

WICHITA COUNTY

Overby, Lambert & Trout 7 30
Waggoner, Turman Oil Co. 20 22
Overby, Lambert & Trout 8 60
Cabe, Rhoden & Benton 1 ..... dry
Cabe, R. R. Clark et al 1-A ..... dry

Completions 5
Production 112
Dry holes 2

WILBARGER COUNTY

Waggoner, Patterson et al 1 ..... dry
Waggoner, Southwestern Royalty Co. 2. 35

Completions 2
Production 35
Dry holes 1

YOUNG COUNTY

Winkler, Akin & Rayzor 2 ..... dry
Clarida, H. B. Alexander 1 ..... dry
Jeffery-C, Arkansas Fuel Oil Co. 1 .... dry
Andrews, Bob Elmore 1 ..... dry
Wilson & Allison, F. H. Gose 1 ..... dry
Bullock et al, Jack Harris 1 ..... dry
Furr et al, Lloyd Oil Corp. 1 ..... dry
Bullock, Maer & Hamilton 1 ..... dry
Johnson, A. H. Parks 1 ..... dry
Graham, Pet. Producers Co. 2 205
Belknap Coal Co., Willis & Terrell 2 ... dry
McBrayer et al, Wootten & Reed 3 .... dry
Remington, Young Bros. & Alexander 8. 50
Kisinger, Cunningham et al 5 60
Dawa, Thompson et al 1 ..... dry
Bellamy, F. E. Butler et al 1 ..... dry
Farmer, Chandler Drlg. Co. 1 ..... dry
Graham, J. T. Cloyes 1 ..... dry
Fury R. Co., Lee Flowers et al 1 ..... dry
Kunkel, Newman Hill 1 ..... dry
Kirkland, King R. Co. et al 1 ..... dry
Greer, Murphy Oil Co. 1 ..... dry
Jones, Nelson-Simpson & Young Bros. 1. dry
Lowe, Panhandle Ref. Co. 6 ..... dry
Graham, Pet. Producers Co. 3 203
Bullock, Terrell & Wainwright 1 ..... dry
Bullock, Terrell et al 1 ..... dry
Jordon, Willis & Terrell 1 ..... dry
Leberman, Childers & McKinney 1 .... dry
Williamson, C. E. Cloyes 1 ..... dry
North W. S. Block, Featherstone et al 1. 1½
Jeffery, F.H.E. Oil Co. 1 ..... dry
Jeffery, P. F. Gwynn 1 216
Larimore et ux, Geo. Mollenkoph 5 ..... dry
Kirkland, E. R. Riggs 1 105
Keith, W. N. Scott 6 12
Belknap Coal Co., Sid Swink 2 ..... dry
Remington, Young Bros. & Alexander 9. dry
Graham Acct. 1, Godley Oil Co. 4-A ... dry
Keith, Floyd Ard et al 1 ..... dry
J. W. Bullock, Arkansas Fuel Oil Co. 1. dry
Baldwin, J. A. Bearman et al 1 ..... dry
R. E. Hill-C, Pat Fowler 1 ..... dry
I. H. Gathright, Lamar & Burkhart 1.. dry
A. E. Logan, Primrose Ref. & Fullerton 1 ..... dry
S. B. Kemp, O. H. Rathman 1 ..... dry
A. Furr, H. D. Wilcox et al 1 ..... dry
Johnson, Denham et al 1 ..... dry
T. J. Routon, Rubsam, Maer et al 1 ... dry
Barry, Consolidated Oil Co. of Texas 1. dry
Klenk, N. D. Goldsmith 1 ..... dry
Jeffery-F, W. H. Hammon 1 ..... dry
Finch heirs, Jacob Oil & Gas Co. 1 .. dry
Jeffery, Maer & Hamilton 1 205
Jarnigan, Shaw & Knox 5 ..... dry

Completions 55
Production 853
Dry holes 46

WEST TEXAS FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Andrews	3	10	2	0
Coke	1	0	1	0
Crane	3	182	1	0
Crockett	1	150	0	0
Ector	3	1,182	0	0
Glasscock	2	1,960	0	0
Howard	2	192	0	0
Irion	3	65	2	0
Loving	3	1,424	0	0
Pecos	9	278	2	0
Presidio	1	0	1	0
Reagan	1	150	0	0
Reeves	1	0	1	0
Scurry	1	0	1	0
Schleicher	1	0	1	0
Taylor	2	60	1	0
Upton	1	17	0	0
Ward	7	3,578	2	0
Winkler	1	17,856	0	0
Total October	45	27,104	15	0
Total September	56	41,720	21	0
Difference	11	14,616	6	0

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drlg.	Ttl.
Crane	2	1	9	12
Crockett	0	0	1	1
Ector	0	2	9	11
Fisher	4	2	3	5
Glasscock	1	2	0	3
Howard	5	8	5	18
Irion	0	4	4	8
Jones	0	1	1	2
Pecos	9	10	13	32
Reagan	1	0	5	6
Upton	4	0	4	8
Ward	2	2	7	11
Winkler	0	2	5	7
Miscellaneous	9	48	24	81
Total October	33	82	90	205
Total September	26	90	87	203
Difference	7	8	3	2

WELLS COMPLETED

ANDREWS COUNTY

W. J. Mathis, Deep Rock Oil Co. et al 1 10
Hayden Miles, Deep Rock Oil Co. et al 1 ..... dry
Mrs. Aver Meador, Newt Maer et al 1.. dry

Completions 3
Production 10
Dry holes 2

COKE COUNTY

W. A. Stepp, Arkansas Fuel Oil Co. et al 1 ..... dry

CRANE COUNTY

J. T. McElroy-B, Gulf Prod. Co. 3..... 143
Cowden Bros. & Co.-C, C. C. Duffey 1.. dry
University, Magnolia Pet. Co. & Hardwick 3 40

Completions 3
Production 182
Dry holes 1

CROCKETT COUNTY

L. P. Powell, McMan & Amerada 2.... 150

ECTOR COUNTY

University-B, Amerada Pet. Corp. et al 3 332
University-A, Skelly Oil Co. et al 3... 850

Completions 2
Production 1,182

GLASSCOCK COUNTY

R. C. Coffee-B, E. L. Smith Oil Co. 1.. 960
R. C. Coffee-B, Lion Oil Refg. Co. 2...1,000

Completions 2
Production 1,960

HOWARD COUNTY

Kelly Chalk, Magnolia Pet. Co. 1..... 98
W. I. Scrivner-A, Pure Oil Co. 2..... 94

Completions 2
Production 192

IRION COUNTY

J. M. Nutt, J. W. Bristow et al 1..... 65
J. M. Nutt, F. E. Webb et al 1..... dry
J. M. Nutt, Crawford et al..... dry

Completions 3
Production 65
Dry holes 2

LOVING COUNTY

Jim Wheat, Joe Bush et al 1..... 567
Reagan & McElvain, Henshaw et al 1.. 200
Reagan & McElvain, The California Co. 4 657

Completions 3
Production 1,424

PECOS COUNTY

J. H. Tippett (Sun), Cardinal Oil Co. 2 dry
J. H. Tippett-F (Shell), Cardinal Oil Co. 1 150
F. A. Perry, Plymouth Oil Co. 4..... dry
L. L. Byrne, Messenger et al 2..... 37
W. A. Sanford, Barnes et al 1..... 15
University, G. A. Henshaw Jr., Inc. 1.. 21
Mrs. F. E. Forborg, Cardinal Oil Co. 10 25
J. H. Tippett, Dixie Oil Co. 4..... 20
L. L. Byrne, Magnolia Pet. Co. 1..... 10

Completions 9
Production 278
Dry holes 2

PRESIDIO COUNTY

L. C. Brite, L. C. Brite 4..... dry

REAGAN COUNTY

University, Big Lake Oil Co. 180..... 150

REEVES COUNTY

Young Bell, Salsbury & Gregory 1 ... dry

SCURRY COUNTY

J. O. Quinn, Camp Spring O. & R. Co. 2 dry

SCHLEICHER COUNTY

J. A. & W. T. Whitten, Phillips Pet. Co. 1 ..... dry

TAYLOR COUNTY

Hunter, Eastland Oil Company et al 1 60
J. E. Kendall, Clark & Humble O. & R. Co. 1 ..... dry

Completions 2
Production 60
Dry holes 1

UPTON COUNTY

W. A. Chaney, Eppenauer Drlg. Co. 2.. 17

WARD COUNTY

G. W. O'Brien et al, Gulf Production Co., 13 2,734
G. W. O'Brien et al, Gulf Production Co. 14 195
Pecos Merc. Co.-B, Atlantic & R. R. Penn. 1 25
G. W. O'Brien et al, Sid Richardson et al 4 354
E. F. Lanham, The California Co. & Atlantic O. P. Co. 1 ..... dry
E. W. Thomas, The California Co. & Atlantic O. P. Co. 1 ..... dry
Hutchings Stock Assn., Tr-C, Gulf Prod. Co. 5 210

Completions 7
Production 3,578
Dry holes 2

WINKLER COUNTY

E. W. Cowden-B, Shell Pet. Corp. & The Texas Co. 1 17,856

EAST CENTRAL TEXAS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Anderson	2	1,300	0	0	1	1	2
Cherokee	0	0	0	0	0	1	1
Delta	1	0	1	0	1	0	1
Ellis	0	0	0	0	0	1	1
Fannin	0	0	0	0	0	1	1
Gregg	0	0	0	0	0	1	1
Henderson	2	0	2	0	0	4	4
Limestone	1	0	1	0	0	0	0
McLennan	1	0	1	0	0	0	0
Morris	1	0	1	0	0	0	0
Navarro	1	0	1	0	0	1	1
Rains	1	0	1	0	0	0	0
Robertson	1	0	1	0	0	0	0
Rusk	1	500	0	0	4	1	5
Smith	0	0	0	0	0	3	3
Van Zandt	33	105,231	5	0	2	11	13
Wood	2	0	0	0	0	0	0
Total Oct.	47	*107,031	16	0	8	25	33
Total Sept.	25	*17,198	9	0	4	38	42
Difference	22	89,833	7	0	4	13	9

*September figures represent pinched in production; October figures are based on estimated 24-hour flow computed from gauge before shutting in of wells.

WELLS COMPLETED

ANDERSON COUNTY

Boggy Creek-W. L. Cook, Humble O. & R. Co. 2 100
Boggy Creek-Tom Jones, Jr., Humble O. & R. Co. 4 1,200

DELTA COUNTY

Smith, C. A. Everetts 1 ..... abd

HENDERSON COUNTY

Schaunessy, L. G. Bradstreet 1 ..... abd
Cade, E. L. Chapman 1 ..... abd

LIMESTONE COUNTY

Wright, Irish Oil Co. 3 ..... abd

NAVARRO COUNTY

Matthews, Navarro Oil Operators 2 .. abd

McLENNAN COUNTY

McNurmara, Killiman & Phillips 2 .. abd

MORRIS COUNTY

Stagger, Tucker and Fullewood 1 ... abd

RAINS COUNTY

Sackville, Robertson-A. M. Griffith 1.. abd

ROBERTSON COUNTY

Sackville, A. M. Griffith 1 ..... abd

RUSK COUNTY

Bradford, C. M. Joiner 2 500

VAN ZANDT COUNTY

W. L. York, Anderson & Fogelson 1 ..10,000
Mrs. W. A. York, Anderson & Fogelson 1 2,500
Shirley, Broderick & Calvert 1 15,000
C. T. Wolverton, E. L. Chapman et al 1 ..... abd
Fannie Cumbine, T. Daniels 1 ..... abd
C. W. Morris, Dennis Oil Co. 1 ..... abd
R. S. Blake, Humble O. & R. Co. 3 .. 3,200

R. S. Blake, Humble O. & R. Co. 4 .. 3,500
L. A. Dowdle, Humble O. & R. Co. 1.. abd
Carroll, Humble O. & R. Co. 2 2,500
V. T. Davis, Jenkins et al 1 10
A. D. Clark, Pure Oil Co. 1 2,500
A. D. Clark, Pure Oil Co. 1 350
Mrs. W. A. York, Pure Oil Co. 1 3,500
J. T. Taylor, Pure Oil Co. 1 6,000
J. R. Petty, Pure Oil Co. 1 5,000
A. R. Humphreys, Pure Oil Co. 1 2,500
M. F. Shirley, Pure Oil Co. 1 5,000
Neills, Pure Oil Co. 1 60
F. B. Smith, Pure Oil Co. 1 243
W. H. Cook, Pure Oil Co. 1 96
J. T. Thompson, Pure Oil Co. 9 120
O. L. and L. L. Swain, Pure Oil Co. 1.10,000

VAN ZANDT COUNTY

A. R. Tunnell, Pure Oil Co. 1 3,500
A. R. Tunnell, Pure Oil Co. 3 108
A. R. Tunnell, Pure Oil Co. 4 5,000
B. E. Crim, Pure Oil Co. 1 400
J. F. Crim, Pure Oil Co. 2 144
E. L. Fowler, Shell Pet. Corp. 7 6,500
J. T. Taylor, Shell Pet. Corp. 1 5,000
J. T. Taylor, Shell Pet. Corp. 2 6,500
J. T. Taylor, Shell Pet. Corp. 3 6,000
J. P. Porter, Texas Chief O. & R. Co. 1 abd

WOOD COUNTY

Rick, Wood County Dev. Co. 1 ..... abd
King, Big Indian Oil Co. 1 ..... abd

Total completions 47
Production 107,031
Abandoned 16

EAST TEXAS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Bowie	1	0	1	0	1	1	2
Camp	0	0	0	0	0	1	1
Cass	0	0	0	0	2	2	4
Harrison	0	0	0	0	1	1	2
Marion	0	0	0	0	0	2	2
Panola	1	0	1	0	4	6	10
Red River	0	0	0	0	0	2	2
Sabine	0	0	0	0	0	1	1
Shelby	0	0	0	0	0	2	2
Total Oct.	2	0	2	0	8	18	26
Total Sept.	3	0	1	2	7	15	22
Difference	1	0	1	2	1	3	4

WELLS COMPLETED
BOWIE COUNTY

Joseph Eskell Sur.; Tidwell, Lee Timberlake 1 ..... dry

PANOLA COUNTY

Harrison Davis Sur.; O. M. Lawrence, Tex.-La. Prod. Co. 1 ..... dry

SOUTHWEST TEXAS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Mirando	36	1,895	10	3	19	34	53
Dobrowolski	2	30	1	0	5	2	7
Pettus	12	2,625	4	3	4	9	13
Darst Creek	32	28,626	0	0	12	9	21
Chapman	6	610	2	0	8	11	19
Agua Dulce	1	0	0	1	0	1	1
Miscellaneous	35	330	33	0	47	122	169
Total Oct.	124	34,116	50	7	95	188	283
Total Sept.	84	13,836	39	8	97	190	287
Difference	40	20,280	11	1	2	2	4

WELLS COMPLETED
WILDCATS—DUVAL COUNTY

Duval City Land Co., Vacuum Oil Co. 1 500
KOHLER POOL—DUVAL COUNTY
Kohler, Humble Oil & Ref. Co. 49 15
HENNE-WINCH-FARRIS—JIM HOGG COUNTY
Hinnant, South Texas Prod. Co. 2 ..... gas
BANDADO POOL—JIM HOGG COUNTY
Wood, Cole Petroleum Co. 1 ..... abd
COLE POOL—WEBB COUNTY
Benavides, Magnolia Pet. Co. 1 ..... gas
AVIATOR POOL—WEBB COUNTY
Bruni, O. W. Killam 3 ..... abd
SCHOTT POOL—WEBB COUNTY
Garcia, Geo. S. Marshall 2 ..... abd
Cuellar, O. W. Killam 26-A ..... abd
JENNINGS-CUELLAR—ZAPATA COUNTY
Cuellar, O. W. Killam 26-A ..... abd
Cuellar, O. W. Killam 27 20
Cuellar, O. W. Killam 29-B 75
Cuellar, O. W. Killam 30-B 100
Hinnant, O. W. Killam 1 ..... abd
Hinnant, O. W. Killam 4 ..... abd
JENNINGS-MUCKELROY—ZAPATA COUNTY
Gutierrez, Allied Oil & Gas Co. 8 50
Gutierrez, Allied Gas Co. 9 60
Gutierrez, Allied Oil & Gas Co. 10 60
Gutierrez, Allied Oil & Gas Co. 11 90
Trevino, Allied Oil & Gas Co. 17-A 50
Trevino, Alamo Drilling & Leasing Co. 5 15
Trevino, Alamo Drilling & Leasing Co. 6 abd
Montemayor, Nix & Blankenship 5 60
Benavides, H. H. Coffield 1 ..... gas
Garza, Edgington & Niles 1 ..... abd
De los Santos, K. D. Harrison 1 ..... abd
Garza, Keene & Jackson 1 ..... abd
Cuellar, S.R.C. Co. 1-B 15
Cuellar, S.R.C. Co. 2-B 40
Cuellar, S.R.C. Co. 5-B 40
Cuellar, S.R.C. Co. 9-B 60
Gutierrez, W. R. Shankle 4 90
Gutierrez, W. R. Shankle 5 70
Trevino, W. R. Shankle 9 90
Trevino, W. R. Shankle 10 120
Trevino, W. R. Shankle 11 100
Trevino, W. R. Shankle 12 100
Trevino, W. R. Shankle 13 75

Wells completed 36
Production 1895
Dry 10
Gas 3
Gas production 32,500,000

DOBROWOLSKI POOL—BEXAR COUNTY

Adams, Bolling & Michael 1 ..... abd
Beck, Gatlin Oil Co. 1 30

PETTUS AREA—BEE COUNTY

Blk. 30, Buchanan & Lefever 1 800
Blk. 9, C.R.M. Oil Co. 1 ..... abd
Blk. 22, C.R.M. Oil Co. 1 1350
Kimball, Grayburg Oil Co. 1 125
Copeland, Hawn, Mauldin & Grayburg 1 abd
Mathews, Blk. 32, Houston Oil Co. 1 ... gas
Blk. 39, Houston Oil Co. 1 ..... gas
Neumann, Houston Oil Co. 3 100
Ray, Union Producing Co. 17 ..... abd
Ray, Union Producing Co. 18 250
Ray, Union Producing Co. 21 ..... gas
Ray, Union Producing Co. 30 ..... abd

Wells completed 12
Production 2625
Dry 4
Gas 3
Gas production 60,000,000

DARST CREEK—GUADALUPE COUNTY

Anderson, Gulf Production Co. 3 1584
Posey-Baker, Gulf Production Co. 8 1000
Thomas Dix, Gulf Product.on Co. 5 ...1393
Thomas Dix, Gulf Production Co. 6 ...1635
Dix-McKean, Gulf Production Co. 10..1320
Dix-McKean, Gulf Production Co. 11 ..1200
Knoblock, Gulf Production Co. 3 1080
Tadlock, Gulf Production Co. 3 480
Tadlock, Gulf Production Co. 4 920
Denman, Humble Oil & Ref. Co. 15-A...1000
Denman, Humble Oil & Ref. Co. 16-A.. 800
Denman, Hum.le Oil & Ref. Co. 17-A...1500
Denman, Humble Oil & Ref. Co. 18-A.. 850
Dix, Louisiana Oil Refining Co. 7..... 520
Nora Huff, Magnolia Petroleum Co. 1... 375
Knodel, Magnolia Petroleum Co. 3..... 400
Miller, Magnolia Petroleum Co. 4..... 650
Dix, Magnolia Petroleum Co. 9..... 500
Dix, Magnolia Petroleum Co. 10..... 332
Dix, Magnolia Petroleum Co. 11..... 288
Dix, Magnolia Petroleum Co. 12..... 960
Knoblock, Sun Oil Co. 9..... 480
Knoblock, Sun Oil Co. 10..... 135
Knoblock, Sun Oil Co. 11..... 600
Knoblock, Sun Oil Co. 12.....4300
Dallas-Wilson, The Texas Company 9.. 600
Knoblock, The Texas Company 5-A.... 408
Knoblock, The Texas Company 8-B..... 38
Knoblock, The Texas Company 10-B....1368
Knoblock, The Texas Company 11-B.... 480
Parrish, The Texas Company 2 840
Henry Willie, The Texas Company 6... 600

Wells completed 32
Production 28,626

CHAPMAN POOL—WILLIAMSON COUNTY

Abbott, Chapman and others D-3..... 250
Abbott, Chapman B-6 ..... abd
Fuchs, Chapman and others 3 60
Sides, Chapman and others 2 ..... abd
Simmons, Marts and others 1 50
Abbott, Patton Prod. Co. 1 250

Wells completed 6
Production 610
Dry 2

AGUA DULCE—NUECES COUNTY

Ollie Purl, South Texas Production Co. 2 ..... gas

MISCELLANEOUS WILDCATS

Atascosa County—
Young, Nute, Walker & Darden 1 ..... abd
Bexar County—
Gembler, Carl Brothers 1 ..... abd
Ellison, Moore-Jauer 1 ..... abd
Cooksey, Penn Oil Co. 1 80
Miles, J. M. Russell 1 ..... abd
Beck, Henry Yelvington 1 ..... abd
Brooks County—
Singer, Humble Oil & Refining Co. 2.. abd
Bee County—
Billingsley, Hicks & Young ..... abd
McKinney, Humble Oil & Refining Co. 7 250
Rapp, E. M. Jones 3 ..... abd
Hicks, Nichols Oil Corp. 4 ..... abd
A. Theis, S.R.C. Corp. 1 ..... abd
Caldwell County—
Roebuck, Batts and others 1 ..... abd
Kelly, Gulf Production Co. 1 ..... abd
Guadalupe County—
Meyer, Cranfill & Reynolds 1 ..... abd
Wells, Grayburg Oil Co. 2 ..... abd
Malone, Guy Lewis 1 ..... abd
Kendall County—
Kaston, A. S. Mowinkle 1 ..... abd
Kleberg County—
Simmons, Bowen-Sarles 1 ..... abd
Lee County—
Fee, A. H. Wheeler and associates 1.. abd
Live Oak County—
Lyne, Penn Oil Co. 1 ..... abd
Medina County—
Medina Valley Irrigation, Lynko 1 .... abd
Nueces County—
Baldwin, Independent Oil & Gas Co. 1. abd
San Patricio County—
Freeman, Magnolia Petroleum Co. 1... abd
Travis County—
Gentry, Garfield Oil Corp. 1 ..... abd
Uvalde County—
Uvalde, Pecan Plantation, Ed Anglin 1. abd
Williamson County—
Simmons, A. J. Luke 1 ..... abd
Nelson, R. L. Raborn and others 1 ... abd
Jackson, M. M. Rowan 1 ..... abd
Lawler, Southland Development Co. 1.. abd
Greenthal, Taylor Temple Oil Co. 1.... abd
Walker, R. S. Wilson 1 ..... abd
Sitman, Wilson et al 1 ..... abd
Zavala County—
La Pryor, Ed Anglin 6 ..... abd
Weatherby, Krebs & Davis 1 ..... abd

Wells completed 35
Production 330
Dry 33

GULF COAST

Summary of Field Operations
Southeast Texas

	Comp.	Prod.	Abd.	Gas	Rigs	Drlg.	Ttl.
Barbers Hill	14	7,603	1	0	4	22	26
Batson	3	20	1	0	0	1	1
Big Creek	1	1,047	0	0	1	1	2
Blue Ridge	1	0	1	0	0	0	0
Boling	1	29	0	0	0	1	1
Clay Creek	2	610	0	0	0	2	2
Damon Mound	1	0	1	0	0	1	1
DeWalt	1	768	0	0	0	0	0
Esperson	3	535	0	0	0	5	5
Goose Creek	0	0	0	0	0	1	1
Hankamer	1	670	0	0	0	1	1
High Island	0	0	0	0	1	1	2
Hull	3	670	0	0	0	2	2
Humble	8	890	1	0	1	9	10
Lost Lake	0	0	0	0	0	2	2
Nash	0	0	0	0	0	1	1
North Dayton	2	1,150	1	0	0	3	3
Orange	2	80	0	0	0	3	3
Orchard	2	1,180	0	0	0	0	0
Pierce Junction	5	2,465	1	0	1	2	3
Port Neches	0	0	0	0	0	2	2
Raccoon Bend	6	1,029	3	0	0	5	5
Refugio	5	1,150	2	0	1	33	34
Saratoga	3	24	0	1	0	1	1
Sour Lake	0	0	0	0	0	1	1
South Liberty	1	90	0	0	0	1	1
Spindletop	4	1,081	0	0	0	4	4
West Columbia	1	35	0	0	0	1	1
Miscellaneous	10	3,330	7	0	4	30	34
Total Oct.	80	24,456	19	1	13	136	149
Total Sept.	72	14,919	28	2	12	137	149
Difference	8	9,537	9	1	1	1	0
South Louisiana							
Bayou Blue	1	145	0	0	0	1	1
Bayou Boullion	0	0	0	0	0	2	2
Black Bayou	2	1,999	0	0	1	0	1
Edgerly	1	57	0	0	0	0	0
Jennings	1	0	1	0	0	1	1
Hackberry	5	1,800	2	0	2	5	7
Lake Barre	1	67	0	0	0	0	0
Lockport	4	1,763	0	0	0	5	5
Sorrento	0	0	0	0	0	1	1
Starks	3	120	2	0	0	0	0
Sulphur	2	5,050	0	0	1	2	3
Sweet Lake	1	0	1	0	1	0	1
Vinton	3	3,200	0	0	0	7	7
Welsh	0	0	0	0	1	0	1
Miscellaneous	9	0	9	0	1	15	16
Total Oct.	32	14,201	15	0	7	39	46
Total Sept.	21	9,068	13	0	3	43	46
Difference	12	5,133	2	0	4	4	0
Gulf Coast—							
Total Oct.	113	38,657	34	1	20	175	195
Total Sept.	93	23,987	41	2	15	180	195
Difference	20	14,670	7	1	5	5	0

WELLS COMPLETED
TEXAS

BARBERS HILL—CHAMBERS COUNTY

E. W. Barber, Mills Bennett Prod. Co. 1 1250
Means, Mills Bennett Prod. Co. 2 187
Kirby, Humphreys Corp. 2-H 21
Scott, Humphreys Corp. 2 ..... abd
Fitzgerald, Humphreys Corp. 1 70
Kirby, Humphreys Corp. 9-A 1400
Woodward, McAlbert Oil Co. 5 156
McKinney, Sinclair Oil & Gas Co. 4 15
Wilburn fee, Sun Oil Co. 10 724
Wilburn fee, Sun Oil Co. 11 350
Chambers, Sun Oil Co. 6 1320
Phillips, Yount Lee Oil Co. 5 1050
Zadie Fisher, Yount Lee Oil Co. 1 504
Woodward, Yount Lee Oil Co. 9 546

Total completions 14
Production 7603
Abandoned 1

BATSON—HARDIN COUNTY

Sun, Ada Belle Oil Co. 143 ..... abd
Gulf, East Batson Oil Co. 2 8
Mary Ellen, Paraffine Oil Co. 14 12

Total completions 3
Production 20
Abandoned 1

BIG CREEK—FORT BEND COUNTY

Davis, Gulf Prod. Co. 60 1047
BLUE RIDGE—FORT BEND COUNTY
Blakely, South Texas Pet. Co. 5 ..... abd
BOLING—WHARTON COUNTY
Taylor, The Texas Company 12-A 29
CLAY CREEK—WASHINGTON COUNTY
Marcus, Sun Oil Co. 1 360
Witt, Sun Oil Co. 4 250

Total completions 2
Production 610

DAMON MOUND—BRAZORIA COUNTY

Wisdom, Layne et al 7 ..... abd
ESPERSON—LIBERTY COUNTY
Davis, Cranfill-Reynolds Co. 6 160
Esperson, Cranfill-Reynolds Co. 13 150
Moores Bluff, Cranfill-Reynolds Co. 5 .. 125

Total completions 3
Production 535

DEWALT—FORT BEND COUNTY

Nelson, Humble O. & R. Co. 11 768
HANKAMER—LIBERTY COUNTY
Boyt, Gulf Prod. Co. 9 670
HUMBLE—HARRIS COUNTY
Burgess, Houtex Prod. Co. 1 ..... abd
Burt, South Texas Prod. Co. 2 75
Bender, Sun Oil Co. 15 150
Bender, Sun Oil Co. 17 90
Atlantic and Gulf, The Texas Co. 2 .. 250
House, The Texas Company 25 125
Pickens, E. M. Wilson 5 125
Foster, West Prod. Co. 3 75

Total completions 8
Production 890
Abandoned 1

HULL—LIBERTY COUNTY

Barngrover, Empire G. & F. Co. 33 ... 350
Barngrover, Houston Prod. Co. 15 250
Dolbear, Republic Prod. Co. 117 70

Total completions 3
Production 670

LIBERTY—LIBERTY COUNTY

Mitchell, Sun Oil Co. 24 90
NORTH DAYTON—LIBERTY COUNTY
Gulf, Harrison and Abercrombie 1 1150
Wilhite, Saxet Oil Co. 3 ..... abd

Total completions 2
Production 1150
Abandoned 1

ORCHARD—FORT BEND COUNTY

Moore, Gulf Prod. Co. 25 540
Moore, Gulf Prod. Co. 26 600

Total completions 2
Production 1180

PIERCE JUNCTION—HARRIS COUNTY

Whitehead, Moody Corp. 2-B 900
Dooley, Navarro Oil & Explin. Co. 20.. 200
Settegast, Rio Bravo Oil Co. 14-A .... abd
G. P. Co.-Jones fee, Elvin Tilton 1 ...1100
Minchen, Warner & Quinlan 1 265

Total completions 5
Production 2465
Abandoned 1

RACCOON BEND—AUSTIN COUNTY

Hugo-Hagen, Humble O. & R. Co. 1 .. abd
Fritz Lamp, Humble O. & R. Co. 1 .... abd
Wilson, Humble & Valley 4 450
Diemar, Humble & Valley 3 315
Payne, Humble & Valley 10 264
Thompson, Humble & Valley 9 ..... abd

Total completions 6
Production 1029
Abandoned 3

ORANGE—ORANGE COUNTY

Gunstream, Sun Oil Co. 3 60
Tasco, Tillery Oil Co. 2 20

Total completions 2
Production 80

REFUGIO—REFUGIO COUNTY

Rose Lambert, Houston Oil Co. 1-A ... abd
Jeter, Houston Oil Co. 1 50
Strauch, Larco Oil Co. 6 300
Terrell, Pittsburg Refugio Oil Corp. 2.. abd
Fannie Heard, Union Prod. Co. 10 800

Total completions 5
Production 1150
Abandoned 2

SARATOGA—HARDIN COUNTY

McShane fee, Paggi Bros. 16 10
Cotton, Rio Bravo Oil Co. 92-A ..... gas
Cotton, Rio Bravo Oil Co. 92-B 14

Total completions 3
Production 24
Gas 1

SPINDLETOP—JEFFERSON COUNTY

McFaddin, Yount Lee Oil Co. 17 15
McFaddin, Yount Lee Oil Co. 52 6
McFaddin, Yount Lee Oil Co. 92 180
McFaddin, Yount Lee Oil Co. 113 850

Total completions 4
Production 1031

WEST COLUMBIA—BRAZORIA COUNTY

Smith, Premier Oil Co. 1 35

MISCELLANEOUS TEXAS

Brazoria County—
Random, Mills Bennett Prod. Co. 1 .... abd
Poole, Mills Bennett Prod. Co. 1 1540
Seaburn, Freeport Sulphur Co. 1 ..... abd
Stratton, Freeport Sulphur Co. 1 ..... abd
R. H. Moores, United Oil Syndicate 1.. abd
Chambers County—
Jackson, Pure Oil Corp. 1 ..... abd
Harris County—
Minnetex, Humble O. & R. Co. 3 710
Liberty County—
McFaddin, Gulf Prod. Co. 2 1080
Polk County—
Balmatier, Sunshine Oil Co. 1 ..... abd
Walker County—
Smither, Joyce-Richardson et al 1 .... abd

Total completions 10
Production 3330
Abandoned 7

WELLS COMPLETED
SOUTH LOUISIANA

BAYOU BLUE—IBERVILLE PARISH

Wilbert, Standard Oil Co. 5 145
BLACK BAYOU—CAMERON PARISH
State, Shell Pet. Corp. 1 799
Watkins, Shell Pet. Corp. 15 1200

Total completions 2
Production 1999

EDGERLY—CALCASIEU PARISH

Paraffine, Associated Oil Co. 5 57
HACKBERRY—CAMERON PARISH
Lacey, Fred Book et al 1 ..... abd
Watkins, Calcasieu Oil Co. 21 150
Landry, Calcasieu Oil Co. 1 50
Portia, Yount Lee Oil Co. 2 ..... abd
State Land, Yount Lee Oil Co. 30 1600

Total completions 5
Production 1800
Abandoned 2

JENNINGS—ACADIA PARISH

Crowley, Yount Lee Oil Co. 7 ..... abd
LAKE BARRE—TERREBONNE PARISH
State, The Texas Company 5 67
LOCKPORT—CALCASIEU PARISH
H. J. Moss, Union Sulphur Co. 1 38
Moss, Union Sulphur Co. 2 700
Miller, Vacuum-Gulf 23 25
Miller, Vacuum Oil Co. 29 1000

Total completions 4
Production 1763

STARKS—CALCASIEU PARISH

Roderick, Adams Oil Co. 1 ..... abd
Lutcher Moore, Gulf Ref. Co. 25 129
Industrial, J. G. Sutton et al 2 ..... abd

Total completions 3
Production 129
Abandoned 2

SULPHUR—CALCASIEU PARISH

Fee, Union Sulphur Co. 760 4300
Fee, Union Sulphur Co. 762 750

Total completions 2
Production 5050

SWEET LAKE—CAMERON PARISH

Sweet Lake, Magnolia Pet. Co. 1 .... abd

VINTON—CALCASIEU PARISH
Gardiner estate, Gulf Ref. Co. 2 500
Gardiner, Gulf Ref. Co. 4 2200
Strip, Wilson Broach Oil Co. 3 500

Total completions 3
Production 3200

MISCELLANEOUS LOUISIANA
Assumption Parish—
Dugas & LeGlane, Texas Gulf Sulphur Co. 1 ..... abd
Iberville Parish—
Wilbert, Texas Gulf Sulphur Co. 2 .... abd
Wilbert, Texas Gulf Sulphur Co. 3 .... abd
Iberia Parish—
Lake Peigneur, Jefferson Lake Oil Co. 9 ..... abd
Jefferson Davis Parish—
De Vilbiss, Vacuum Oil Co. 1-A ..... abd
Plaquemines Parish—
Buras Levee Board, Gulf Ref. Co. 1 .. abd
Cockrell, Humble O. & R. Co. 3 ..... abd
St. Martin Parish—
Iberville Land, The Texas Co. 2 ..... abd
St. Mary Parish—
Charenton-The South Coast Co., The Texas Co. 1 ..... abd

Total completions 9
Production 0
Abandoned 9

NORTH LOUISIANA

Summary of Field Operations

	Comp.	Prod.	Dry	Gas*	Rgs.	Dlg.	Ttl.
Avoyelles	0	0	0	0	0	2	2
Bienville	0	0	0	0	1	4	5
Bossier	8	0	4	4	3	10	13
Caddo	2	0	1	1	5	6	11
Caldwell	0	0	0	0	0	1	1
Catahoula	1	0	1	0	0	1	1
Claiborne	1	0	1	0	0	4	4
Concordia	0	0	0	0	1	2	3
DeSoto	3	12	2	0	2	8	10
LaSalle	0	0	0	0	0	1	1
Morehouse	5	0	1	4	2	3	5
Natchitoches	1	0	1	0	0	3	3
Ouachita	3	0	1	2	6	0	6
Red River	0	0	0	0	0	2	2
Richland	8	0	0	9	14	11	25
Sabine	13	2,777	5	0	9	35	44
Tensas	0	0	0	0	0	3	3
Union	3	0	0	3	2	2	4
Webster	3	25	2	0	1	1	2
West Carroll	0	0	0	0	0	1	1
Total Oct.	53	2,814	19	23	46	100	146
Total Sept.	67	1,426	22	27	48	100	148
Difference	14	1,388	3	4	2	0	2

*Gas production: Bossier, 7,500,000 feet; Caddo, 7,500,000 feet; Morehouse, 42,727,400 feet; Ouachita, 15,000,000 feet; Richland, 250,272,000 feet; Union, 18,350,000 feet; total, 323,999,400 feet.

WELLS COMPLETED
BOSSIER PARISH
28-19-11 McDade, Autrey Oil Co. 1 .... dry
36-23-13 Bollinger, Greenwood Prod. Co. 2 ..... dry
24-17-12 Jeter, La. Gas & Fuel Co. 3.. gas
24-17-12 Webb, La. Gas & Fuel Co. 1.. gas
22-19-11 Wetherbee, H. I. Morgan 6-B. dry
36-23-12 Wilkinson, The Texas Co. 14.. dry
14-17-12 Harris, Woodley Pet. Co. 1 .. gas
14-17-12 Harris, Woodley Pet. Co. 2 .. gas

Wells completed 8
Gas 4
Dry 4
Gas production 7,500,000

CADDO PARISH
8-16-16 Hudson, Calatex Oil & Gas 1.. gas
23-21-14 Swann, L. B. Mawk 1 ..... dry

Gas production 7,500,000
CATAHOULA PARISH
23-6-5 Tensas Delta, La. G. & F. Co. 1-A dry
CLAIBORNE PARISH
27-20-7 J. M. Dance, El Dorado Chief Oil Co. 1 ..... dry
DESOTO PARISH
3-11-14 Mary Hood, Joe Burnham et al 1 ..... dry
12-11-16 Payne, Michlouxanner O. & G. Co. 1 ..... dry
32-13-14 Rhodes, Pelham & Bundy 1.. 12
MOREHOUSE PARISH
21-20-4 Burrell, Greenwood Prod. Co. 1. gas
33-21-5 Crossett Lbr. Co., La. G. & F. Co. 26 ..... gas
24-20-4 Sandidge, Ouachita Nat. Gas Co. 7 ..... gas
17-18-6 Tensas Delta, Pelican Nat. Gas Co. 1 ..... dry
4-20-4 Tensas Delta, Southern Carbon Co. 13 ..... gas

Wells completed 5
Gas 4
Dry 1
Gas production 42,727,000
NATCHITOCHES PARISH
32-11-10 Cooper, J. W. Cooper et al 2 (loc.) ..... abd
23- 5- 6 Clark & Morse Lbr. Co., S. D. McDaniels 2 ..... dry
OUACHITA PARISH
25-20-4 Kate Cole, Amalgamated Co. 1-B ..... gas
9-17-3 Haynes, C. W. Frierson 1 .... dry
49-20-4 Guthrie, Grecian Bend Gas Co. 1 ..... gas

Gas production 15,000,000
RICHLAND PARISH
33-16-6 Boughton, Greenwood Prod. Co. 1 ..... gas
36-17-5 Rhymes-Earle, Palmer Corp. 1. gas
26-17-5 Rhymes-Earle, Palmer Corp. 2. gas
7-16-6 Rhymes-England, Palmer Corp. 10 ..... gas
12-16-5 Rhymes-England, Palmer Corp. 11 ..... gas
1-16-6 Boughton, United Carbon Co. 1 gas
1-16-6 Hallock, Southern Carbon Co. 1-B ..... gas
33-16-6 L. Williams, United Carbon Co. 1 ..... gas

Wells completed 8
Gas 8
Gas production 250,272,000
SABINE PARISH
33-10-12 Logan, Ark. Fuel Oil Co. 14 .. 10
26- 8-12 Susie Russell, Ark. Fuel Oil Co. 1 ..... dry
26- 8-12 Tatum, Dixie Oil Co. 1 1045
15- 7-14 Sabine Lbr. Co., R. L. Gay, trustee 5 ..... dry
25- 8-12 Newton, Lanier & Tarver 1 .. 150
33- 8-12 Bowman-Hicks Lbr. Co., Loring Oil Co. 12 12
26- 8-12 Schull, Loring Oil Co. 2 ..... dry
4- 7-11 Trammell, Loring Oil Co. 1 .. 30
4- 7-11 La. Long Leaf Lbr. Co., Pelican Nat. Gas Co. 4 25
11- 7-12 Sabine Lbr. Co., Pelican Nat. Gas Co. 4 1500
30- 8-12 Elliott, W. D. Perritt 1 5
24- 8-12 Jane Largent, The Texas Co. 1 dry
33- 8-11 Stille, The Texas Co. 1 ..... dry

Wells completed 13
Production 2777
Dry 5
UNION PARISH
29-22-4 Tanner, Bahan & Bahan 1 .... gas
28-21-4 Grayling Lbr. Co., Industrial Gas Co. 5 ..... gas
11-21-3 J. M. Edwards, Interstate Nat. Gas Co. 1 ..... gas

Gas production 18,350,000
WEBSTER PARISH
31-18- 8 Crichton Co., J. P. Evans et al 1 ..... dry
1-22-11 Womble, H. M. Jones Drlg. Co. 1 (drk.) ..... abd
26-23-11 Slack, Liggett et al 2 ..... dry
1-22-11 Gardner, Magnolia Pet. Co. 2.. 25

Wells completed 3
Production 25
Dry 2

ARKANSAS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas*	Rgs.	Dlg.	Ttl.
Chicot	0	0	0	0	0	1	1
Clay	0	0	0	0	0	1	1
Cleburne	1	0	1	0	0	1	1
Columbia	1	0	1	0	0	1	1
Franklin	1	0	0	1	0	0	0
Garland	0	0	0	0	0	1	1
Hot Springs	0	0	0	0	0	2	2
Johnson	0	0	0	0	0	3	3
Layafette	0	0	0	0	1	0	1
Lawrence	0	0	0	0	1	0	1
Lincoln	0	0	0	0	1	0	1
Little River	0	0	0	0	0	1	1
Logan	0	0	0	0	0	1	1
Madison	0	0	0	0	0	1	1
Miller	0	0	0	0	0	1	1
Ouachita	0	0	0	0	0	6	6
Phillips	1	0	1	0	0	0	0
Pike	0	0	0	0	0	1	1
Pope	1	0	1	0	0	1	1
Scott	0	0	0	0	1	1	2
Sebastian	1	0	0	1	0	4	4
Union	1	910	0	0	4	9	13
Van Buren	0	0	0	0	0	1	1
Washington	0	0	0	0	0	4	4
Yell	0	0	0	0	0	1	1
Total Oct.	7	910	4	2	10	46	56
Total Sept.	11	505	7	0	12	41	53
Difference	4	405	3	2	2	5	3

*Gas production: Franklin, 6,500,000 feet; Sebastian, 3,000,000 feet; total, 9,500,000 feet.

WELLS COMPLETED
CLEBURN COUNTY
19-9-10 Donophan Lbr. Co., Cosden Oil Co. of Ark. 1 ..... dry
COLUMBIA COUNTY
16-17-20 Merritt, S. Y. Dorfman et al 1 dry
FRANKLIN COUNTY
33-10-26 Edtin, Red Bank Oil Co. 1 .... gas

Gas production 6,500,000
PHILLIPS COUNTY
15-1s-1e Mannheimer, Mahon Interests 1 ..... dry
POPE COUNTY
13-9-19 Mo. Pacific R. R., Cosden Oil Co. 1 ..... dry
SEBASTIAN COUNTY
27-8-30 Moore, Lavaca Oil & Gas Co. 1 gas

Gas production 3,000,000
UNION COUNTY
10-18-13 Thompson, Marine Oil Co. 1-B (loc.) ..... abd
12-17-14 R. Pumphrey, Ohio Oil Co. 4. 910

Production 910

TENNESSEE FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl
Putnam	0	0	0	0	0	1	1
Smith	0	0	0	0	0	1	1
Warren	0	0	0	0	0	1	1
Clay	0	0	0	0	1	1	2
Dickson	0	0	0	0	0	2	2
White	0	0	0	0	0	1	1
Morgan	0	0	0	0	0	2	2
Lincoln	0	0	0	0	0	2	2
Overton	0	0	0	0	0	2	2
Coffee	0	0	0	0	0	1	1
Franklin	0	0	0	0	0	1	1
Cheatham	0	0	0	0	0	1	1
Total Oct.	0	0	0	0	1	16	17
Total Sept.	0	0	0	0	1	16	17
Difference	0	0	0	0	0	0	0

MISSOURI

Summary of Field Operations

	Comp.	Prod.	Dry	Rgs.	Dlg.	Ttl.
St. Louis	1	0	1	0	4	4
Total Oct.	1	0	1	0	4	4
Total Sept.	0	0	0	0	4	4
Difference	1	0	1	0	0	0

WELLS COMPLETED
ST. LOUIS COUNTY
St. Ferdinand—Survey 405, Ollis Young, St. Elco Dev. Co. 1. ..... dry

MISSISSIPPI FIELDS

	Comp.	Prod.	Dry	Gas*	Rgs.	Dlg.	Ttl.
Alcorn	0	0	0	0	0	1	1
Attala	0	0	0	0	1	0	1
Chickasaw	0	0	0	0	0	1	1
Clay	0	0	0	0	0	1	1
Grenada	0	0	0	0	1	0	1
Hinds	2	0	1	1	7	8	16
Humphreys	0	0	0	0	0	1	1
Jasper	0	0	0	0	1	0	1
Lafayette	0	0	0	0	1	0	1
Lauderdale	1	0	1	0	0	1	1
Lincoln	0	0	0	0	0	1	1
Madison	0	0	0	0	0	1	1
Monroe	0	0	0	0	0	4	4
Rankin	2	0	0	2	3	5	8
Warren	1	0	1	0	1	1	2
Winston	0	0	0	0	0	1	1
Yalobusha	0	0	0	0	0	1	1
Yazoo	0	0	0	0	0	1	1
Total Oct.	6	0	3	3	15	28	43
Total Sept.	13	0	7	6	8	27	35
Difference	7	0	4	3	7	1	8

*Gas production: Hinds, 40,000,000 feet; Rankin, 85,00,000 feet; total, 125,000,000 feet.

WELLS COMPLETED
HINDS COUNTY
11-5-1e Chadwick-Brown, Lefleur Oil & Gas Co. 1 ..... gas
2-5-1e Ridgeway-McGee, Cleve Love et al 1 ..... dry

Gas production 40,000,000
LAUDERDALE COUNTY
33-8-18 Harrison, Meridian Oil & Gas 1 dry
RANKIN COUNTY
12-5-1e Hartefield, Millstein Oil & Gas Corp. 1 ..... gas
12-5-1e Investment, Southern Pet. Co. 1 gas

Gas production 85,000,000
WARREN COUNTY
8-18-5 Dornbush, El Dorado Oil Co. 1. dry

KENTUCKY FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Barren	0	0	0	0	0	3	3
Allen	0	0	0	0	0	1	1
Ohio	23	850	7	5	1	34	35
Daviess	14	270	9	0	3	26	29
Hancock	9	125	3	1	0	4	4
McLean	6	308	1	1	0	3	3
Henderson	12	34	5	1	0	5	5
Webster	0	0	0	0	0	3	3
Butler	0	0	0	0	0	2	2
Hopkins	0	0	0	0	0	7	7
Muhlenberg	0	0	0	0	0	8	8
Christian	0	0	0	0	2	2	4
Union	0	0	0	0	0	2	2
Breckenridge	0	0	0	0	0	1	1
Logan	0	0	0	0	0	1	1
Todd	0	0	0	0	0	1	1
Caldwell	0	0	0	0	0	1	1
Metcalf	1	0	0	1	0	0	0
Cumberland	0	0	0	0	0	2	2
Hart	6	1,625	0	1	3	22	26
Wayne	3	0	3	0	1	1	2
Estill	3	12	1	0	0	3	3
Lee-Owsley	0	0	0	0	0	4	4
Lawrence-Johnson	0	0	0	0	0	2	2
Johnson-Magoffin	1	20	0	0	0	6	6
Clay	0	0	0	0	0	2	2
Knox	1	0	0	1	0	0	0
McCracken	0	0	0	0	0	1	1
Madison	0	0	0	0	0	1	1
Leslie	0	0	0	0	1	1	2
Floyd	0	0	0	0	0	4	4
Total Oct.	78	3,244	29	11	11	153	164
Total Sept.	67	842	21	10	10	135	145
Difference	11	2,402	8	1	1	18	19

WELLS COMPLETED
DAVIESS COUNTY
Owensboro—Alla Atherton, Hupp, Duff & Co. 3 75
L. Purcell, Goldberg & Young 16..... 50
B. L. Johnson, Ohio Oil 5 25
H. K. Atherton, S. M. Sirman 7 80
H. K. Atherton, S. R. Sirman 6..... 40
Jim Yeiser, George Engle 1, 2 ..... dry
John Mills, Creek Drilling 1 ..... dry
J. D. Walters, Daley & Daley 2..... dry
M. E. Cravens, Geo. Randolph & Co. 1 dry
J. S. Simmons, McMahon & Co. 1.... dry
Cruz, Jess Watts & Co. 1..... dry
Rachael Shultz, Vickers & Co. 1..... dry
C. Gregory, Jas. C. Ellis & Co. 2..... dry

Wells completed 14
Production 270
Dry 9
HANCOCK COUNTY
Pellville—Otis Bellamy, Cox, Ewell & Co. 1 ..... dry
Bolling Sisters, Cox, Ewell & Co. 1.. gas
Virgil Crow No. 1, H. C. Smith 1.... dry
Boyd Stout, H. C. Smith 1 25
Lincoln Richards, Jas. C. Ellis & Co. 5 5
J. B. McGovern, Lowman, Daley & Co. 6 40
J. F. Crow West 60-a, D. T. Bolling 2 55
Rev. Edge, D. T. Bolling 1..... dry

Wells completed 8
Production 125
Dry 3
Gas 1
McLEAN COUNTY
Calhoun—Will Ashton, Cameron, Thompson & Co. 1 200
Central State Bank, Mel Root & Co. 1 50
S. R. King, Creek Drilling 1 43
Lila Sandefur, Jas. C. Ellis & Co. 2.. 15
O. Mayo, Jas. C. Ellis & Co. 1 ..... gas
A. H. Wilson, Pet. Oil 1 ..... dry

Wells completed 6
Production 308
Dry 1
Gas 1
HENDERSON COUNTY
Niagara—Lee Busby, Pearson Pet. 1... 4
Latta-Yeaman, Worsham & King 2... dry
A. W. Griffin, Niagara Oil & Gas 1... 6
Warren Wilson, Niagara Oil & Gas 2 8
G. T. Hatchett, Niagara Oil & Gas 1.. gas
J. K. Triplet, Imperial Oil & Gas Products 5 4
Bert Duncan, Imperial Oil & Gas Products 1 4
Jim Cooper, Niagara Drilling 2 8
Walter Young, Wood Oil 12 ..... dry
M. B. Saltz, Sam Lee Oil & Gas 1... dry
John Griffin, Wittmer Oil & Gas 1.. dry

Wells completed 12
Production 34
Dry 5
Gas 1
METCALF COUNTY
Edmonton—Jameson, Consolidated Utilities 2 ..... gas
HART COUNTY
LaGrand—Lewis McKinnie, Norris & Davis 2 500
Nannie McKinnie, Norris & Davis 1.. 500
Bob Hatcher, Norris & Davis 1 125
Abe Garvin, Warder & Norris' 1 ... 300
Lagrand School lot, H. Z. Clark 1... 200
J. A. Taylor, Norris & Davis 1 .... gas

Wells completed 6
Production 1,625
Gas 1
WAYNE COUNTY
District 3—Geo. E. Bell, Smith, Cameron & Co. 4 ..... dry
Coyle Heirs, Smith, Cameron & Co. 4 dry
District 5—Odis Catron, Harman, Franks & Hamlin, 5 ..... dry

Wells completed 3
Dry 3
ESTILL COUNTY
District 10—J. P. Brineger, Humes & Wallace 2 ..... dry
J. P. Brineger, Humes & Wallace 3.... 2
James Evans, Cox & Gabbard 4 10

Wells completed 3
Production 12
Dry 1
JOHNSON-MAGOFFIN COUNTIES
District 25—L. C. Bailey, Cumberland Petroleum 44 20
KNOX COUNTY
Barboursville—Helton, Distill - Martin Gas 2 ..... gas
OHIO COUNTY
Hartford—Herbert Coy, D. J. White & Co. 1 ..... dry
G. W. Patton, Chester Oil 9..... 100
G. W. Patton, Chester Oil 10..... 150
G. W. Patton, Chester Oil 11 50
W. Hamilton, Leeper Oil 4 300
Hamilton, Cumberland Petroleum 10 dry
Alfred Brown, Cumberland Petroleum 3 ..... dry
Don Mitchell, Jas. C. Ellis & Co. 6.. 15
J. W. Moseley, Jas. C. Ellis & Co. 3 dry
W. F. Stephens, Fuqua & Cooper 1... gas
W. H. Lyons, J. R. Pointer & Co. 2.. gas
T. P. Royal, 25 T. P. Royal & Co, 17 20
Pate Royal, H. L. Ogle & Co. 28..... 75
J. T. Griffith, Wood Oil 4..... gas
Herman Fuqua, Geo. Randolph 1.... gas
Geo. Ray, Geo. Randolph 2..... dry
Tom Sandige, Cornell & Co. 1..... dry
Lafe Payne, Newton Oil & Co. 2..... 20
Connor Heirs, H. M. Hunt 1..... dry
A. F. Bellamy, Brenner & Adams 4.. 20
Frank Reynolds, Kentucky Nat. Gas 3 gas
Nation Bros. G. H. Rice Trustee 1... 50
Nation Bros. Oliver Jenkins & Co. 1 50

Wells completed 23
Production 850
Dry 7
Gas 5

ROCKY MOUNTAIN AREA

COLORADO
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Dlg.	Ttl.
Boulder	1	0	1	0	1	3	4
Fremont	1	30	0	0	0	12	12
Garfield	1	0	0	1	0	0	0
La Plata	0	0	0	0	0	3	3
Larimer	1	0	1	0	3	8	11
Las Animas	0	0	0	0	1	3	4
Moffat	0	0	0	0	6	7	13
Montezuma	1	0	0	1	0	1	1
Morgan	0	0	0	0	0	2	2
Rio Blanco	0	0	0	0	0	3	3
Routt	0	0	0	0	2	2	4
Weld	0	0	0	0	0	4	4
Miscellaneous	0	0	0	0	0	32	32
Total Oct.	5	30	2	2	13	80	93
Total Sept.	6	0	3	3	12	79	91
Difference	1	30	1	1	1	1	2

WELLS COMPLETED
33-3S- 14 Haller, Mesa Verde Ranch Co. 2 ..... gas
8-3s-102 Smith, Fulton Pet. Co. 1 .... gas

23-4n- 70 Hoffman, Continental Oil Co. 1 ..... dry
2-19- 70 Shaw, Continental Oil Co. 1.. 30
18-3n- 70 Anderson, Reliance Oil Co. 1 dry

Wells completed 5
Production 30
Gas 30,000,000
Dry and abandoned 2

MONTANA

Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Cat Creek ..	0	0	0	0	1	1	1
Kevin Sunb't	12	130	4	2	8	9	17
Pondera	0	0	0	0	1	1	2
Border Field	4	140	1	0	1	4	5
Miscellaneous	7	15	2	3	15	60	75
Ttl. Oct...	23	285	7	5	25	75	100
Ttl. Sept...	28	1,184	14	7	22	86	108
Difference.	5	899	7	2	3	11	8

WELLS COMPLETED

25-35-2 Abel, H. B. Abel Co. 7 5
14-35-3 Ellinger, B.A.S. Arronow 1 ... 35
2-34-2 Shoemaker, Californ a Co. 4.. dry
34-34-1 Clarthworthy, Coolidge-Coolidge 1 ..... gas
10-35-2 Bruins, Tom Davis Synd. 13 .. 10
28-35-1 Levnick, Monopeg O. & G. 2. 10
27-33-2 Gypsy, Northern Nat. Gas Dev. 1 ..... gas
35-35-3 Stewart, Oh Boy Oil Co. 3... 40
29-35-1 Bluhm, W. E. Rico 16 ..... dry
31-35-1 Allen, "31" Petro. Co. 8 ..... dry
26-35-2 A el, Texas Pacific Acct. 4.. 30
18-35-2 Peterson, Westmont Oil, Ltd. dry
12-37-4 Buckley, Amego Oil Co. 1 .. dry
1-37-4 Farbo, Inland Petro. Co. 2 .. 50
2-37-4 Iowa Holding, Hannah Porter 2 30
1-37-4 M. Farbo, Ohio Oil Co. 1 60
5-25-1 Skoog, Prod. Ind. Oil Co. 4 ... 5
4-25-1 Columbia, Sterling Oil Co. 1.. 10
20-37-4 Brown, Western Nat Gas 2.. dry
2-26-6 Scott, Midwest Refg. 36 NE. dry
21- 3-33 NE, Big Horn Oil Co. 1 ..... gas
15- 9-58 Gas Dev. Co. 57 ..... gas
30- 9-59 United Monarch Gas Co. ..... gas

Completions 23
Production 285
Dry 7
Gas 5

WYOMING

Summary of Field Operations

District or County—	Comp.	Prod.	Dry	Gas	Rigs	Dig.	Ttl.
Salt Creek	2	753	0	0	1	3	4
Big Horn	1	2,500	0	0	0	4	4
Carbon	2	0	1	1	1	10	11
Converse	0	0	0	0	0	6	6
Fremont	1	0	0	1	1	6	7
Hot Springs	0	0	0	0	0	3	3
Johnson	0	0	0	0	0	3	3
Lincoln	1	0	1	0	0	4	4
Natrona (exclu. Salt C.)	1	0	1	0	1	13	14
Niobrara	1	150	0	0	0	4	4
Park	0	0	0	0	6	17	23
Sublet	0	0	0	0	1	10	11
Sweetwater	1	0	0	1	2	8	10
Uinta	0	0	0	0	3	12	15
Weston	9	1,012	0	0	7	10	17
Total Oct. ..	19	4,415	3	3	23	113	136
Total Sept. ..	18	2,625	2	5	27	120	147
Difference ...	1	1,790	1	2	4	7	11

WELLS COMPLETED

14-46- 64 Bock, Lambie Oil Co. 5 15
23-46- 64 McCullough, Yellowstone Pet. Co. 1 240
23-46- 64 McCullough, Jas. McCullough 3 125
14-46- 64 Osage Trust Co. 7 400
14-46- 64 Bock, Lombie Oil Co. 4 60
14-46- 64 Straitiff & Curtis 4 10
14-46- 64 Updike & Sons 2 10
14-46- 64 Osage Trust Co. 6 140
8-46- 63 Nichols et al 4 12
15-16-104 Union Pacific, Mountain Fuel Supply Co. 2 ..... gas
19-39- 60 Wehopeso, Argo Oil Co. 7 150
1-33- 83 Chicago Oil Co. 3 ..... dry
26-40- 79 S. W. Wyoming Associated, 31-SD-3 728
10-39- 79 Domino-Bessemer Asso. 5 ... 25
25-37-117 Larcher, Midwest Ref. Co. 1 dry
17-27- 95 Beaver Divide Gas Co. 2 .... gas
35-13- 92 Red Feather, Bivens et al 1 gas
30-26- 87 Producers & Refiners 9 .... dry
35-56- 97 Easton, Ohio Oil Co. 1 2500

Wells completed 19
Production 4415
Gas 12,000,000
Dry and abandoned 3

NEW MEXICO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
De Baca	0	0	0	0	0	2	2
Eddy	3	264	0	0	2	5	7
Hildalgo	1	0	1	0	0	0	0
Lea	33	237,329	1	1	7	52	59
McKinley	0	0	0	0	1	9	10
Rio Arriba ..	0	0	0	0	0	5	5
San Juan	1	0	1	0	0	9	9
San Miguel ..	0	0	0	0	0	5	5
Socorro	1	0	1	0	1	0	1
Torrance	0	0	0	0	1	2	3
Valencia	0	0	0	0	0	2	2
Miscellaneous.	0	0	0	0	1	7	8
Total Oct...	39	237,593	4	1	13	98	111
Total Sept..	28	197,724	4	0	18	109	127
Difference ..	11	39,869	0	1	5	11	16

WELLS COMPLETTD

13-17-30 Stevens, Flynn, Welch & Yates 2 60
22-17-30 Parke, Lockhart & Co. 2-X .. 134
5-18-27 Brainard, R. D. Compton 3 ... 70
14-22-20 State, P. O. B. Dev. Co. 1 .... dry
28-18-38 Grimes, Prairie Oil & Gas Co. 1 8,544
29-18-38 State, California Co. 2 18,792
30-18-38 Bowers, Humble Oil & Ref. Co. 8 2,976
29-18-38 Bowers, Humble Oil & Ref. Co. 9 16,416
28-18-38 Grimes, Shell Pet. Corp. 2 ..18,606
19-18-38 McKinley, Shell Pet. Corp. 4..9,797
19-18-38 McKinley, Shell Pet. Corp. 7..7,340
19-18-38 McKinley, Shell Pet. Corp. 6..11,405
31-18-38 Berry, Shell Pet. Corp. 1 2,851
28-18-38 Grimes, Shell Pet. Corp. 1 6,156
33-18-38 State, Shell Pet. Corp. 1-B ..2,693
29-18-38 State, Continental Oil Co. 1-A 16,826
33-18-38 State, Continental Oil Co. 2-B.1,644
33-18-38 State, Continental Oil Co. 1-B.2,211
32-18-38 State, Amerada Pet. Corp. ...2,656
30-18-38 McKinley, Amerada Pet. Corp. 4 7,872
29-18-38 State, Amerada Pet. Corp. 1-B.9,007
19-18-38 Hardin, Empire Gas & Fuel 2.5,702
19-18-38 Hardin, Empire Gas & Fuel 1.11,340
30-18-38 State, Ohio Oil Co. 2 4,506
32-18-38 State-Northrup, Ohio Oil Co. 4 19,180
29-18-38 Grimes, Tidal Oil Co. 2 1,514
25-18-37 State, Texas Co. 2-C 9,932
33-18-38 State, Landreth Prod. Co. 2-B.3,758
5-19-38 McKinley, Texas Co. 2 9,817
4-19-38 State, Midwest Ref. Co. 4....2,786
6-19-38 State, Atlantic Oil Prod. Co. 1.3,499
32-18-38 Grimes, Gypsy Oil Co. 4 8,164
32-18-38 Grimes, Gypsy Oil Co. 6 9,493
19-21-36 State, Getty Oil Co. 1 332
17-21-36 Coleman, Tidal Oil Co. 1 1,215
14-26-37 Farnsworth, Midwest Ref. Co. 19 ..... dry
22-23-36 State, Texas Pacific C. & O. 1 gas
1-21-14 Shaffer, Reserve Oil Co. 2 .... dry
14-3s-6e Stackhouse, Lockhart & Co. 3 dry

Wells completed 39
Production 237,593
Dry and abandoned 4
Gas 7,000,000

UTAH

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Dig.	Ttl.
Total Oct. ...	0	0	0	0	1	29	30
Total Sept. ..	0	0	0	0	1	29	30
Difference ...	0	0	0	0	0	0	0

EASTERN FIELDS

Summary of Wells Completed

Field—	Comp.	Prod.	Dry	Gas
Allegany	4	28	0	0
Bradford	41	52	0	0
Venango-Clario	16	15	1	5
Middle Field	6	8	1	1
Butler-Armstrong	4	4	0	1
Southwest Pennsylvania .	15	27	5	8
West Virginia	65	93	11	36
Southeast Ohio	74	907	24	12
Total October	225	1,134	42	63
Total September	239	1,380	47	63
Difference	14	246	5	0

Summary of Work Underway

Field—	Rigs	Dig.	Ttl.
Allegany	0	12	12
Bradford	6	20	26
Venango-Clarion	0	6	6
Middle Field	1	4	5
Butler-Armstrong	2	9	11
Southwest Pennsylvania .	3	14	17
West Virginia	25	93	118
Southeast Ohio	17	77	94
Total October	54	235	289
Total September	51	223	274
Difference	3	12	15

WELLS COMPLETED
ALLEGANY

Forest Oil Corp. 1
Prosser, Wood and Swartout 1
Roberts, P. F. Shaner et al..... 6
Childs, American Oil Co. 20

Completions 4
Production 28

BRADFORD

Rounds, J. W. Kauffman .....Pressure
Rounds, J. W. Kauffman .....Pressure
Bingham 371, Lane No. 1 et al 67 1
Bingham 374, J. F. Magee 8 2
Booth, Q. Q. Lynn 17 3
Fee, Lincoln & Brink 42 2
Fee, Lincoln & Brink 43 1
Forest Oil Corp. 1
Forest Oil Corp. .....Pressure
Forest Oil Corp. .....Pressure
Forest Pet. Corp. 1
Niagara Oil Corp. .....Pressure
Niagara Oil Corp. .....Pressure
Forest Dev. Corp. 1
Fee, Willrock Prod. Co. 1
Fee, Willrock Prod. Co. 1
Fee, Willrock Prod. Co. 1
Franchot, Babcock Oil Co. 2
Fee, Harten & Jennings estate 2
Fee, George Crooks estate 5
Quintuple, Lou Potter Mullhaupt 1
Farm 4053, South Penn Oil Co. ....Pressure
Farm 4053, South Penn Oil Co. ....Pressure
Farm 4053, South Penn Oil Co. ....Pressure
Farm 4053, South Penn Oil Co. 1
Farm 4053, South Penn Oil Co. 1
Farm 4053, South Penn Oil Co. 1
Bingham 321, B. T. Andrus 1
Kinley Oil Co., H. J. Walter .....Pressure
Chatley, Walter & Passmore .....Pressure
Melvin, South Penn Oil Co. 1
Quintuple, Healey Pet. Corp. 1
Lewis Run Mfg. Co., Mallory, Pringle & Barcroft No. 4 2
Fee, Penntuck Oil Co. 1
Clark, W. H. Emery 1
O'Neil, Ball and Ryan 6
Fee, Healey Pet. Corp. 2
Borden, T. P. Thompson, Jr. 2
Farm 3791, South Penn Oil Co. 4
Bingham 143, Producers Bank & Trust Co. 9 1
Bingham 143, Producers Bank & Trust Co. 1

Completions 41
Production 52
Pressure 11

BUTLER-ARMSTRONG

Held, J. C. Trees 1..... gas
Turner, W. E. and A. E. Pipher 3..... 2
Kelly, J. S. Walker 1..... 1
Snyder, Willis M. Ruby 21..... 1

Completions 4
Production 4
Gas 1

VENANGO-CLARION

Alcorn, John S. Prather 1..... 1
Corbett & White, Corbett & White 13.. 1
Corbett & White, Corbett & White 14.. 1
Heeter, Master & Hess 10..... 3
Weaver, Hill Oil Co. 1..... dry
Nuhfer, Nuhfer & Co. 4..... gas
Brocklehurst, United Nat. Gas 3962.... gas
Betz, Fryburg Motor Co. 1..... gas
McLaughlin, Thos. McLaughlin 25..... gas
Korb, W. B. and F. E. Kapp 20..... gas
Wright, H. G. McComb & Son et al 1.. 2
Reid, Exchange Bank & Trust Co. 3... 3
Davis, S. P. McCalmont 3..... 1
Davis, S. P. McCalmont 4..... 1
Manley, Glass & Highfield 29..... 1
Graham, Emma L. Hulin 23..... 1

Completions 16
Production 15
Dry 1
Gas 5

MIDDLE FIELD

Grandin, J. L. Maitland 1
Berry, T. H. Kervin, Jr. 5
Borden, M. P. Wasson estate 1
Lot 8, Cherry Run Oil Co. 49 ..... gas
Brown, J. G. Cochran 16 ..... dry
W2593, Hoskins Roeder et al 88 1

Completions 6
Production 8
Dry 1
Gas 1

SOUTHWEST PENNSYLVANIA
WELLS COMPLETED
WASHINGTON COUNTY

Weir, Carnegie Nat. Gas Co. 1 25
Montgomery, Duquesne Gas Corp. 1 ... gas
Plant, H. V. Sproul & Co. 1 ..... gas
Rasel, Carnegie Gas Co. 1 ..... gas
McCaslin, Rapp O. & G. Co. 1 ..... gas

ALLEGHENY COUNTY

Ferguson hrs., Pittsburgh Partnership 1 gas

BEAVER COUNTY

Hughes, J. D. Reed 1 ..... dry
Shon, Kirk Oil Co. 1 ..... dry

GREENE COUNTY

Johns, Equitable Gas Co. 1 ..... gas
Barie, J. L. Garard & Co. 6 2
Tilton, Manufacturers L. & H. Co. 1... dry
Leslie, Duquesne Gas Corp. 1 ..... dry
Chambers, Manufacturers L. & H. Co. 3,441 ..... gas
Ackley, Natural Gas Co. of W. Va. 1... dry

BUTLER COUNTY

Mowery Bros., McNanny Oil Co. 1..... gas

SOUTHEAST OHIO
WELLS COMPLETED
MONROE COUNTY

Cronin, Shay McMullin Co. 2 3
Johnson, Preston Oil Co. 3 ..... dry

PERRY COUNTY

Somerset Fair Grounds, Perry Sturm et al 1 ..... dry
Kulp hrs., Shenker & Bowman 1 ..... gas
Hammer, Gas Producing Co. of Ohio 1.. dry
Larne, Preston Oil Co. 1 ..... dry
Brown, Mideast Co. 1 ..... gas
Melick, Atha Oil Co. 16 25

HOCKING COUNTY

Sunday Creek Coal Co., Preston Oil Co. 1,421 ..... dry

GUERNSEY COUNTY

Robinson, Ohio Fuel Gas Co. 3 20
Beal hrs., George Jewell et al 1 10
Messer hrs., Ernest Walters et al 1 ... 10

MUSKINGUM COUNTY

Stokely, Ohio Fuel Gas Co. 2 60
Riley, Wittmer Oil & Gas Properties 1.. 8
Varner, Preston Oil Co. 1 145
Perdue, Palmer & Geisinger 1 ..... gas
Dunn, Palmer & Geisinger 1 ..... gas
Pake, Ohio Fuel Supply Co. 1 ..... gas
Leeland, Ohio Fuel Supply Co. 1 ..... gas
Stanberry & Harrison, M. F. Whitehill 1 dry
Border, Wittmer Oil & Gas Properties 1 gas

LICKING COUNTY

Robinson, Preston Oil Co. 1 ..... dry
Mossholder, I. C. Robinson et al 3 80
Johnson, Murphy Pet. et al 1 50
Ascraft, Preston Oil Co. 2 ..... dry
Babcock, Emerald Pet. Co. et al 2 .... dry
Porter, McClay Bros. et al 2 ..... dry
Priest, Pure Oil Co. 6 8

TUSCARAWAS COUNTY

Asher, Hopewell Fuel & Gas Co. 2 .... dry
Little, Capital Drilling Co. 7 50

HOLMES COUNTY

Close, Ohio Fuel Gas Co. 2 ..... dry
Campbell, Ohio Fuel Gas Co. 1 ..... gas
McCullough, East Ohio Gas Co. 4 30

ASHLAND COUNTY

Doerer, I. C. Robinson et al 1 ..... dry
Sellers, Great Lakes Oil Co. 1 ..... dry

COSHOCTON COUNTY

Donaker, Preston Oil Co. 1 180

ATHENS COUNTY

Coen, Orange O. & G. Co. 1 ..... dry
Whaley, C. H. Beasley et al 14 2
Sunday Creek Coal Co., Columbia O. & G. Co. 1 ..... gas
Wilson, Kachelmacher est. 1..... dry
Lick Run C. & C. Co., R. W. Porter et al 3 18
Goddard, Harry J. Smith et al 1 2
Curtis, Harry J. Smith et al 7 2

VINTON COUNTY

Stanley, Raccoon O. & G. Co. 1 6

NOBLE COUNTY

Young, I. C. Robinson et al 3 3
Benj. Corp., Ogle & Ogle 17 ..... dry
McClintock, Ohio Fuel Gas Co. 1 ..... gas

WASHINGTON COUNTY

Dewees, Thomas Oil Co. 2 2
Cummons, Herlan Schramm et al 16 .. dry
Wickens, Elmer Wickens 10 2
Dewees, Thomas Oil Co. 1 2
Herland & Mendenhall, First Natl. Bank of Marietta No. 18-39 2
Hasly, Wilford Bros. 1 2

MEDINA COUNTY

Essig, Oko O. & G. Co. 43 30
Essig, Oko O. & G. Co. 44 25
McVicker, Oko O. & G. Co. 33 35
McVicker, Oko O. & G. Co. 34 5
Ross, E. R. Edson & Son Co. 27 ..... dry
Franks, E. R. Edson & Son Co. 20 7
Ripley, E. R. Edson & Son Co. 30 ..... dry
Payne, Ohio Fuel Gas Co. 2..... gas
Long, Ohio Fuel Gas Co. 1..... gas

JEFFERSON COUNTY

Swartz, Elliot & Co. 1..... dry
Stratton, C. M. Stratton 1..... 1
Dennis, Wm. Graham & Co. 1..... 1
Sinclair, Lee & Co. 1..... dry
Cathers, Richard Graham et al 1 5
Wilt, Boyce Drlg. Co. et al 4 10
Miller, I. H. Beren 1..... 2

KNOX COUNTY

Rine, Preston Oil Co. 1..... 65

BELMONT COUNTY

Renker, Fulton et al 1..... 2
Dement & Howell, W. C. McBride, Inc. 4 dry

MORGAN COUNTY

Starett, R. C. Wittemer 1..... 5
McCarty, Ralston & Maynard 17..... dry

WEST VIRGINIA
WELLS COMPLETED
HARRISON COUNTY

Sommerville, Reserve Gas Co. 2..... gas

MARION COUNTY

Amos, Victor Tennant 1..... gas
Mercer, Harry Tennant 1..... gas
Snell, Owens Illinois Glass Co. 141 .... gas
Hibbs, S. N. Elliott 4..... gas

MONONGALIA COUNTY

Lemley, J. B. Nuss et al 1..... dry

TYLER AND WETZEL COUNTIES

McDonald, Hundred Gas Co. 2..... gas

MARSHALL COUNTY

Pariott, Twin Oak O. & G. Co. 1..... 1
Emery, Manufacturers L. & H. Co. 2,077 gas

HANCOCK COUNTY

Brenneman, R. J. Braden & Co. 45 5

DODDRIDGE COUNTY

Smith, Frank Finley et al 1..... 1
Spurgeon, Pgh. & W. Va. Gas Co. 4,993 2

RITCHIE COUNTY

Boyce, Bachelor, Choguill & Ray 1 ..... gas
W. Va. tract, J. W. Jones 28..... 1
Morris-Grimm, Park Bowser 3..... gas
Wolfe, W. H. Bickle 1..... 2
Cumberlidge, Rexroad & Robinson 1... dry
Rogers, W. A. Bickerstaff 2..... dry

CLAY COUNTY

Schoonmaker, Thompson Gas Co. 24 .... gas

WOOD COUNTY

Eppeline, F. G. Mixer 4..... dry
Athey, Carter & Rinehart 3..... 1
McAteer, Chas. S. Smith 4..... dry
Mayo, L. W. Bickle 1..... dry
Swain, B. F. Webb & Co. 1..... dry

WIRT COUNTY

Hale, W. C. Patterson 20..... 1
Watkins, Hope Const. & Ref. Co. 3,520.. dry
Jackson, Groves Whitecotton 1..... 1

GILMER COUNTY

Webster, Philadelphia Gas Co. 1..... gas

BOANE COUNTY

Kieffer, United Fuel Gas Co. 2..... gas
Knopp, Buffalo O. & G. Co. 1..... gas
Smith, Heck Oil Co. 1..... 5
Bogga, I. L. Storrs et al 1..... gas
Jennings, Ohio Valley Gas Corp. 14 ... gas

CALHOUN COUNTY

Elliott, Virginian G. & O. Co. 3..... 5
Jarvis, F. F. McIntosh 1..... gas
Stump, L. P. Bickel 12..... 5
Morris et al, C. B. Lewis et al 2..... gas
Shaffer, Hope Const. & Ref. Co. 1..... gas
Goff, C. B. Lewis 1..... gas
McDonald, M. F. Crowley 1..... 2
Collins, W. H. Bickel 1..... gas
Roberts, Godfrey L. Cabot 1..... gas
Hayhurst, W. H. Bickel 3..... gas

BOONE COUNTY

L.R.&P. tract A, Pure Oil Co. 41..... 10
Federal Coal Co., Godfrey L. Cabot 28.. gas
Federal Coal Co., Godfrey L. Cabot 39 . gas
Allen Pryor, Owens Illinois Glass Co. 18 gas
Yawkey Freeman Coal Co., Pond Fork O. & G. Co. 2..... gas
Barker, Hope Natural Gas Co. 7,498 ... gas
L.R.&P. tract, Pure Oil Co. 38..... 25
Federal Coal Co., Pure Oil Co. 46..... gas
Federal Coal Co., Godfrey L. Cabot 42.. gas
Federal Coal Co., Pure Oil Co. 48..... gas

KANAWHA COUNTY

Williams Coal Co., Pure Oil Co. 251.... 6
Williams Coal Co., Pure Oil Co. 253.... 15
Scott & Smith, Island Gas Co. 1..... gas
Black Band C. & C. Co., United Fuel Gas Co. 4,067 ..... gas
Bradford & Laidley, Allegheny Gas Corp. 6 ..... gas

WAYNE COUNTY

Wilson, Wayne United Fuel & Gas Co. 18 dry
Crumb, Bull Creek Gas Co. 1..... gas

MINGO COUNTY

Messer, Two Way Oil & Gas Co. 2..... 5
Red Jacket Cons. C. & C. Co., Red Jacket O. & G. Co. 13..... gas
Vance, South Eastern Gas Co. 1..... dry

UPSHUR COUNTY

Snyder, C. & A. Gas Co. 1..... gas

BRAXTON COUNTY

See, Philadelphia Nat. Gas Co. 7,488... dry

CENTRAL OHIO

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Dig.	Ttl.
Ashland	14	12	9	2	4	16	20
Medina	18	126	5	5	2	10	12
Lorain	4	0	1	3	3	10	13
Wayne	4	0	0	4	1	7	8
Holmes	3	90	1	1	1	3	4
Ashtabula ..	1	0	0	1	0	2	2
Richland ...	3	0	3	0	3	3	6
Knox	2	0	1	1	1	11	12

Coshocton ..	3	190	1	1	6	4	10
Summitt ...	3	9	0	3	2	10	12
Licking	10	139	5	0	5	10	15
Muskingum .	13	274	2	4	6	16	22
Athens	15	17	6	6	2	21	24
Lawrence ...	0	0	0	0	2	3	5
Tuscarawas .	3	50	1	1	1	6	7
Stark	1	0	1	0	3	8	11
Fairfield	2	6	1	0	1	1	2
Guernsey	6	100	0	2	2	9	11
Belmont	4	0	1	3	0	7	7
Gallia	0	0	0	0	0	1	1
Scioto	0	0	0	0	0	1	1
Pike	0	0	0	0	0	2	2
Total Oct.	110	1,054	39	37	46	161	207
Total Sept.	85	767	24	35	43	158	201
Difference	25	287	15	2	3	3	6

COMPLETED WELLS

ASHLAND COUNTY

Greene—D. C. Baker, Ohio Fuel Gas. 2-5,261 ..... dry
Jackson—Silas Weidman, The Kemrow Co. 1 ..... dry
Orange—Grace Souders, Ohio Fuel Gas. 1-5,308 ..... dry
Perry—Melvin Devault, D'Lano Co. 3... dry
Ira Myers, Clifford & Kolb 6..... dry
Lake—Phillip Doerr, Robinson & Co. 3. dry
C. I. Sellers, Robinson & Co. 4..... 2
Henry Mosher, Wile & Co. 3..... 5
Vermillion—Ezra Culler, Ohio Fuel Gas 1-5,217 ..... gas
Clear Creek—Leroy Shaw, The Kemrow Co. 1 ..... dry
Hanover—Floyd Kick, Ohio Fuel Gas 1-5,253 ..... gas
Miflin—Mabel V. Heifner, Trout & Co. 1 5
Milton—Lily Wharton, Mill & Co. 1.... dry
Leonard Wharton, Mill & Co. 1..... dry

Wells completed 14
Production 12
Dry 9
Gas 2

MEDINA COUNTY

Lafayette—Emma T. Hutton, Ohio Fuel Gas. 1-5,303 ..... gas
Homer—Chas. Bernads, F. E. Barnhart 1 gas
Frank Rader, The Kemrow Co. 2..... gas
Harrisville—M. S. Payne, Ohio Fuel Gas. 2-5,216 ..... gas
Westfield—G. O. Kirk, Ohio Fuel Gas 3-5,290 ..... dry
E. & M. Cox, Cammeron & Co. 1.... dry
Sharon—Altha Woodward, Ohio Fuel Gas 1-5,247..... dry
York—J. W. Shive, Ohio Fuel Gas 2-4,26 gas
Chatham—Henry Essig, Oko Oil & Gas 42 30
Henry Essig, Oko Oil & Gas 43 30
Henry Essig, Oko Oil & Gas 44..... 25
Jess McVicker, Oko Oil & Gas 33.... 25
Jess McVicker, Oko Oil & Gas 34.... 5
Daniel Ross, E. R. Edson & Son Co. 27 ..... dry
Marcus A. Frank, E. R. Edson Son Co. 5 6
Marcus A. Frank, E. R. Edson & Son Co. 6 2
D. B. Stratton, Peavey & Co. 14.... dry
Thos. Brown, Curtis & Co. 2 3

Wells completed 13
Production 189
Dry 5

MUSKINGUM COUNTY

Hopewell—E. E. Varner, The Preston Oil 1-1,437 145
Harrison—Salena M. Stanberry, H. G. Farmer & Co. 1 ..... dry
A. P. & J. W. Rush, Donahue & Co. 2 3
Newton—B. P. Stokely, The Preston Oil 1-1,425 60
Perry—Carl W. Riley, Wittmer Prop. Trus. 1 5
Frank Border, Wittmer Prop. Trus 1 gas
Licking—Oscar Perry, Hopewell Gas & Fuel 1 60
Salem—Azariah Davis, Wehrle Co. 1... dry
Monroe—Chas. E. Vensel, McLaughlin Bros. 6 1
John Hawthorn, Fetty & Louchbary 1 dry
Brush Creek—Lawrence B. Pake, Ohio Fuel Gas 1-5,267 ..... gas
A. S. Leland, Ohio Fuel Gas 1-5,300... gas
Orin Perdew, Sagle & Co. 1 ..... gas

Wells completed 13
Production 274
Dry 3
Gas 4

ATHENS COUNTY

Ames—C. W. Henderson, Ohio Fuel Gas 1-5,327 ..... gas
Robt. Bean, Moser & Co. 14 2
Berne—C. O. Grimes, Ohio Fuel Gas 2.. gas
N. D. & C. C. Curtuss, Carpenter & Glazier, 12, 13, 14 ..... dry
Lee—Emma Marchant Est. Townsend & Co, 1 3
Alexander—W. W. Whaley, Bode & Co. 14 2
Carthage—W. B. Barnhill, Ohio Fuel Gas 2-5,305 ..... gas
C. E. Woods, Ohio Fuel Gas 2-5,346.. gas
H. L. Chapman, Orange Gas 3 ..... dry
Troy—F. N. Ahrendt, Bowser Oil & Gas 1 ..... dry
York—Sunday Creek Coal, Ohio Fuel Gas 96-5,260 ..... gas
Hocking-Athens Coal, Porter Bros. 2 10
Cannan—Elmer Halbert, Nuzum & Co. 3 gas
Trimble—Chas. Wilson, Kachelmacher Estate 1 ..... dry

Wells completed 16
Production 17
Dry 6
Gas 6

STARK COUNTY

Lawrence—Wm. Swigart, Penn Oil & Gas 2 ..... dry

TUSCARAWAS COUNTY

Washington—Lewis Little, Capital Drilling 4 50
Stewart Asher, Hopewell Oil & Gas 3 dry
Lonidas Mook, Hopewell Oil & Gas 1 gas

Wells completed 3
Production 50
Dry 1
Gas 1

FAIRFIELD COUNTY

Richland—Owen Stewart, Patton & Bishop 1 ..... dry
Walnut—J. & S. Holliday, Gas Producing Co. of Ohio 1 6

Wells completed 2
Production 6
Dry 1

GUERNSEY COUNTY

Wheeling—A. E. Robinson, Ohio Fuel Gas 3-1,423 20
J. H. C. Brown, Ohio Fuel Gas 1-5,196 ..... gas
Lorence C. Stocker, Ohio Fuel Gas 4-1,448 ..... gas
J. & R. Gadd, East Ohio Gas 3..... 60
S. L. Beal Heirs, Geo. Jewell & Co. 1 10
Westland—Chas. Messer, Ernest Walters & Co. 1 10

Wells completed 6
Production 100
Gas 2

BELMONT COUNTY

Somerset—Wm. T. Lane, A. C. Peters & Co. 2 ..... gas
W. C. Wheatley, A. C. Peters & Co. 1 ..... gas
Howell & Dement, Wm. C. McBride 3 gas
Goshen—C. H. & M. Rice, Charles Rice 3 dry

Wells completed 4
Dry 1
Gas 3

ILLINOIS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Clark	3	2	1	0	0	1	1
Crawford ...	5	22	2	1	1	3	4
Lawrence ...	3	80	2	0	0	2	2
Wabash	6	132	1	0	1	4	5
St. Clair	3	127	1	0	0	8	8
Effingham .	0	0	0	0	0	1	1
Randolph ...	1	0	1	0	0	2	2
Monroe	0	0	0	0	0	4	4
Washington..	0	0	0	0	0	1	1
Clinton	0	0	0	0	0	1	1
Madison	0	0	0	0	0	1	1
Marion	2	16	0	0	0	0	0
McDonough .	1	1	0	0	0	0	0
Total Oct.	24	380	8	1	2	28	30
Total Sept.	11	197	3	0	2	39	41
Difference	13	183	5	1	0	11	11

WELLS COMPLETED
CLARK COUNTY

Parker—N. Cunningham, Chas. Karns & Co. 1 ..... dry
E. and H. Pinnell, R. E. Moffet & Co. 36 1
Hattie L. Briscoe, R. E. Moffet & Co. 7 1

Wells completed 3
Production 2
Dry 1

CRAWFORD COUNTY

Prairie—J. Umstot, Watson & Co. 1... 20
Coulter Hrs., Porterville Oil 1..... dry
Oblong—Jobe Randolph No. 2, Ohio Oil 1 ..... dry
Honey Creek—D. A. Funk No. 2, John Phipps 3 2
Southwest—Catherine Wick No. 2, Ohio Oil 5 ..... abd
Montgomery—Jim Oldham, W. C. McBride, Inc. 1 ..... gas

Wells completed 5
Production 22
Dry 2
Gas 1
Abandoned 1

LAWRENCE COUNTY

Dennison—L. A. Buchannan, Ohio Oil 48 dry
J. W. Perry, Ohio Oil 4..... abd
C. C. Ackman, Chas. Karns & Co. 1.. dry
Vic Harding, J. D. Toomey & Co. 1.. 80

Wells completed 3
Production 80
Dry 1
Abandoned 1

WABASH COUNTY

Wabash—Hattie Robinson, Robinson Oil 4 8
Wm. Schaffer, Robinson Oil 2..... dry
Sarah McMillan, Snowden-McSweeney 9 75
John Leek, Adams Corner Oil 3..... 5
Harrison Buchannan, J. D. Toomey & Co. 12 14
J. M. Mullinax, Highland O. & G. 5.. 30
Cisil Hrs., Cisil Hrs. Oil 1..... abd
Holson-Dorney, Dain Oil 1 ..... abd

Wells completed 6
Production 132
Dry 1
Abandoned 2

ST. CLAIR COUNTY

Sugar Loaf—A. J. Shondy, Ohio Oil 3.. 50
Fred Metler, St. Clair County Oil 4... 77
East Carbondale—Phillips, Joe Weiss & Co. 1 ..... dry
Lot 16—A. Osick, Wm. J. Abbott 1..... abd

Wells completed 3
Production 127
Dry 1
Abandoned 1

RANDOLPH COUNTY

Baldwin—Peter Pauller Hrs., T. J. Collins & Co. 1 ..... dry

CLINTON COUNTY

Wade—J. B. Wilkins, Ohio Oil 1..... abd

MARION COUNTY

Centralia—Jess Bryant, Lloyd Bryant & Co. 1 10
John Kinsey, Petro O. & G. 15..... 6

Wells completed 2
Production 16

McDONOUGH COUNTY

Lamoine—J. A. Clark, Mich.-Ill. Oil 2.. 1

LIMA FIELD

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Wood	0	0	0	0	1	0	1
Hancock	1	0	1	0	0	2	2
Allen	1	10	0	0	0	0	0
Sandusky ...	1	0	0	1	0	1	1
Seneca	1	12	0	0	1	7	8
Lucas	4	77	0	0	0	2	2
Ottawa	0	0	0	0	0	2	2
Shelby	0	0	0	0	0	1	1
Hardin	7	25	0	6	2	9	11
Wyandot	1	0	0	1	0	3	3
Erie	0	0	0	0	0	1	1
Total Oct.	16	124	1	8	4	28	32
Total Sept.	25	62	3	15	3	25	28
Difference	9	62	2	7	1	3	4

WELLS COMPLETED
WOOD COUNTY

Freedom—H. A. Schuerman, Hoyt Oil & Gas 1 ..... abd
Henry—V. A. and G. J. Tomes, G. W. Wilkinson 1 ..... abd

Abandoned 2

HANCOCK COUNTY

Delaware—N. A. Bash, C. A. and F. J. Peavey 1 ..... dry

ALLEN COUNTY

Perry—Irville Hanes, H. G. Kelley & Co. 1 10

SANDUSKY COUNTY

Ballville—Mrs. Sarah Baskey, Fremont Oil Synd. 1 ..... gas

MERCER COUNTY

Union—G. F. Griffin, Lime P.pe & Supply 2, 3, 4, 5, 6, 7, 8, ... abd
G. F. Griffin, Lime Pipe & Supply 9, 10, 11, 12, 13, 14, 15 ..... abd
G. F. Griffin, Lime Pipe & Supply 16, 17, 18, 19, 20 ..... abd

Abandoned 19

VAN WERT COUNTY

York—W. H. Lloyd, Margaret E. Grace 1, 2 ..... abd
G. W. Crone, Margaret E. Grace 1, 2, 3, 4 ..... abd

Abandoned 6

SENECA COUNTY

Jackson—Mrs. C. A. Lyon, O'Neil & Co. 1 12
S. S. Shaw, S. S. Shaw 1, 2, 3, 4 ... abd

Wells completed 1
Production 12
Abandoned 4

LUCAS COUNTY

Monclova—D. C. Teft, Dillon & McFrederick 2 20
France Stone Co., Dillon & McFrederick 1 55
H. Buys, Dillon & McFrederick 1 2

Wells completed 3
Production 77

HARDIN COUNTY

Pleasants—Newton Martin, M. J. Lynch & Co. 1 ..... gas
Jacob Kurt, Barnaby & Co. 1, 2 ..... gas
Fred Kurt, Bert Sheldon & Co. 1 .... gas
Blanchard—O. Schwemmer, Bert Sheldon & Co. 1 ..... gas
Cessna—H. and R. Ziegler, Bryan & Co. 1 ..... gas
Grant Geiger, Wiser Oil 2 25

Wells completed 7
Production 25
Gas 6

WYANDOT COUNTY

Crane—James Freeley, Newcomer & Gregg 1 ..... gas

MICHIGAN FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Dig.	Ttl.
Muskegon ..	0	0	0	0	1	8	9
Isabella	13	1,108	2	3	30	43	73
Midland	0	0	0	0	0	11	11
Kent	0	0	0	0	1	2	3
Ottawa	2	0	1	1	0	2	2
Oceana	0	0	0	0	0	6	6
Mason	0	0	0	0	1	5	6
Manistee ...	2	0	1	1	0	1	1
Lake	0	0	0	0	0	2	2
Cass	0	0	0	0	0	2	2
Tuscola	0	0	0	0	0	1	1
Bay	0	0	0	0	2	0	2
Montcalm ..	0	0	0	0	1	0	1
Newyago ...	1	0	1	0	2	9	11
Clare	0	0	0	0	6	1	7
Saginaw ...	1	0	1	0	0	0	0
Emmett	0	0	0	0	0	1	1
Eaton	0	0	0	0	1	1	2
Kalkaska ..	0	0	0	0	1	1	2
Iosco	1	0	1	0	2	0	2
Missaukee ..	0	0	0	0	1	0	1
Delta	0	0	0	0	1	0	1
Montmorency	0	0	0	0	1	0	1
Gratiot	2	0	2	0	4	4	8
Monroe	0	0	0	0	0	2	2
Lenawee ...	0	0	0	0	0	4	1
Kalamazoo .	0	0	0	0	0	1	1
Shiawassee .	0	0	0	0	2	1	3
Jackson	0	0	0	0	1	0	1
Van Buren .	0	0	0	0	0	2	2
Sheboygan .	0	0	0	0	0	1	1
Allegan	0	0	0	0	2	4	6
Leelanau ...	0	0	0	0	1	0	1
Washtenaw .	0	0	0	0	0	2	2
Osceola	0	0	0	0	1	1	2
Mecosta	1	0	1	0	1	1	2
St. Clair	0	0	0	0	2	0	2
Gennessee ..	0	0	0	0	1	0	1
Alpena	0	0	0	0	0	1	1
Total Oct.	23	1,108	10	5	66	117	183
Total Sept.	34	3,685	13	3	53	102	155
Difference	11	2,577	3	2	13	15	28

WELLS COMPLETED
MUSKEGON COUNTY

Laketon—Ray W. Sovacool, J. V. Howard 1 ..... abd

ISABELLA COUNTY

Chippewa—Burrowa, The Pure Oil 1... 189
Grubb, G-Lee-P. Oil 5 200
Grubb, G-Lee-P. Oil 6 250
Nora Davis, The Dixie Oil 8..... 100
DeStoop, Dixie Oil 1 30
Sawada, Stork Oil 2 264
Denver—Denver Danno, Bernard J. McKee, 1 50
Isabella—Harrison, Gibson-Johnson-Borden 1 ..... dry
Bloomfield—Keller-Mitchell, Isabella Oil Dev. 2 ..... gas
Bartlett-McClintic, Isabella Oil Dev. 1 gas
Vernon—Battle Heirs, Ohio Fuel Supply & Co. 1 ..... gas
Bowman, Mellon-Pollock Oil 55
Sherman—Eddy Estate, Mellon-Pollock Oil 1 ..... dry

Wells completed 13
Production 1,108
Dry 2
Gas 3

OTTAWA COUNTY

Chester—C. E. Moe, Michigan Pet. 1... gas
Blendon—Ponstantine, Corbitt & Thornton, 1 ..... dry

Wells Completed 2
Dry 1
Gas 1

MANISTEE COUNTY

Grant—Diamond, K. L. Diamond 2..... gas
Adanczek, M. L. Diamond 1..... dry

Wells completed 2
Dry 1
Gas 1

NEWYAGO COUNTY

Ashland—Bailey, Atlantic Exploration 1 dry

SAGINAW COUNTY

Brady—Miller Chase, Smith Petroleum 1 dry

IOSCO COUNTY

Grant—Robt. H. Watts, Gibson-Johnson-Dixie Oil 1 ..... dry

GRATIOT COUNTY

Pine River—C. H. Bigsby, Twin City Oil & Gas 1 ..... dry
Alba—Kerr, Wolverine Nat. Gas 1..... dry

Wells completed 2
Dry 2

MECOSTA COUNTY

Sheridan—Grove, Benedum-Trees 1 .... dry

INDIANA FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Dig.	Ttl.
Jay	0	0	0	0	0	3	3
Adams	0	0	0	0	0	1	1
Huntington..	1	0	1	0	0	2	2
Gibson	1	0	0	1	0	2	2
Pike	5	0	1	4	0	3	3
Daviess	2	0	1	1	0	2	2
Sullivan	1	0	1	0	0	4	4
Vigo	2	71	0	0	0	0	0
Warrick	0	0	0	0	0	2	2
Spencer	0	0	0	0	0	6	6
Perry	7	42	1	0	0	4	4
Crawford ...	0	0	0	0	0	2	2
Lagrange ..	0	0	0	0	0	1	1
Posey	0	0	0	0	0	2	2
Putnam	0	0	0	0	0	1	1
White	0	0	0	0	0	1	1
Marshall	0	0	0	0	1	1	2
Monroe	0	0	0	0	1	0	1
Floyd	0	0	0	0	0	1	1
Randolph ...	1	0	1	0	0	0	0
Dubois	0	0	0	0	0	1	1
Knox	0	0	0	0	0	2	2
Vandeburg .	0	0	0	0	1	0	1
Decatur	4	0	0	4	0	0	0
DeKalb	0	0	0	0	0	1	1
Laporte	0	0	0	0	1	0	1
Marion	1	0	0	1	0	0	0
Porter	0..	0	0	0	0	1	1
Total Oct.	25	113	6	11	4	43	47
Total Sept.	23	109	10	5	5	45	50
Difference	2	4	4	6	1	2	3

WELLS COMPLETED
JAY COUNTY

Jackson—S. W. Reed, J. J. Adams 2, 3, 4, 5, 6, 7 ..... abd
P. Hamilton, J. J. Adams 11 12..... abd
Knox—Chas. Dale, Citizens Bank of Portland 1, 2, 3, 4, 5, 6, 7..... abd
Bear Creek—T. W. Shimp, Spence & Pontius, 4 ..... abd
Wm. F. Metzner, Spence & Pontius 2 abd

Abandoned 17

ADAMS COUNTY

Jefferson—D. Studebaker, Berninda Oil & Gas 4 ..... abd

HUNTINGTON COUNTY

Near Ronoka—Jacob Buzzard, Twin Rivers Oil Corp. 1..... dry

GIBSON COUNTY

Columbia—L. W. Gudgell, Indiana Southwest Gas Corp 1..... gas

PIKE COUNTY

Washington—Aaron George, C. C. Taliaferro Jr., 3, 4, 5 ..... gas
J. C. Shea, C. E. Wommer 2..... gas
Logan—J. Chandler, R. J. Rendal & Co. 5 ..... abd
T. D. Phillips, Blue Bird Oil 2..... abd
Lockhart—Wm. Fritz, Gardner Petroleum 1 ..... dry

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Patoka—Everet Crow, V. E. Bolyard & Co. 1 ..... gas

Wells completed	5
Dry	1
Gas	4
Abandoned	2

DAVIESS COUNTY

Veale—Percy Ross, Ross & Hensley 2.. dry
Mort Wilson, Lee Petroleum Co. 1... gas

Wells completed	2
Dry	1
Gas	1

SULLIVAN COUNTY

Curry—E. Thompson, Thomas & Ellis 1 dry

VIGO COUNTY

Prairie Creek—Mabel Prevo, Ohio Oil 1 51
Lennie Thomas, Siosti Oil Corp. 3.... 20

Wells completed	2
Production	71

PERRY COUNTY

North of Troy—Reichardt, Hagerdon & Schlacter, 1 ..... dry
Tobin—John Ramsey, A. F. Glenn & Co. 1 ..... dry
Walter Hafele, Theo. Seitz & Co. 1... 8
Walter Hafele, Theo. Seitz & Co. 2... 12
Walter Hafele, Theo. Seitz & Co. 3... 10
Walter Hafele, Theo. Seitz & Co. 4... 8
Clark—John Ward, Roger E. Kirkwood & Co. 1 4

Wells completed	7
Production	42
Dry	2

RANDOLPH COUNTY

Monroe—Martha Adams, Rickow & Graf 2 ..... dry

DECATUR COUNTY

Greensburg—Ira Hutchinson, Hoosier Public Utilities 1, 2, 3 ..... gas
Leingruber, Hoosier Public Utilities 1 gas

Wells completed	4
Gas	4

MARION COUNTY

Lawrence—L. C. Pickle, Oaklando Gas & Oil 1 ..... gas

CHINESE OIL MARKET

With the development of industries and transportation there has been an increase in the use of gasoline, lubricants, and fuel and gas oils in China. These products which constituted less than 2 per cent of the total petroleum imports of China in 1914, comprised 26 per cent in 1929 with increases in quantities and values. Normally, the United States has a distributive share of two-thirds to four-fifths of China's total kerosene imports. In gasoline sales the share of the United States has grown from about 30 per cent in war years to 45 per cent in 1929, and in lubricating oil from 64 to 73 per cent. Statistics on Chinese imports of oil products in the past three years show declines in the volume of kerosene and fuel oil imports in 1929, the drop in kerosene attributed to the advance in electric lighting. The chief wells worked by the Chinese are at Kanjigan, Aksu and Kuchar. Drilling and chemical refining are unknown, the crude oil being scooped out of surface wells and holes. The strata are so rich that gasoline, kerosene, machine oil, grease and ozokerite of tolerable quality are produced by primitive plants and used freely in the chief towns.

SHREVEPORT GEOLOGISTS

SHREVEPORT, La., Nov. 17.—Some of the trials and tribulations of the lease man and the land department were outlined to the Shreveport Geological Society by Marion Glass of the Louisiana Gas & Fuel Co. (United Gas Co.). Differences in laws affecting leases, mineral deeds, royalty interest in the several states also were dwelt upon as was the necessity of the lease man being a close student of human nature if he is to be successful in his dealings with the land owner and the more sophisticated minerals and royalty owners. The talk was the first of a series to be continued through the winter season designed to acquaint the geological department with the problems and difficulties cropping up in the day-to-day activities of other departments in the production end of the oil business, the complete series constituting what might be called a cross-section view of the operation of a larger unit in the business. The society has also adopted a program of brief reviews of articles appearing in the several technical publications.

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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Runs for the Month of September 1930

	Month bbls.	Daily average bbls.
Prairie P. L. Co.*	3,096,000	103,200
Gulf P. L. Co.	1,253,047	41,768
Texas P. L. Co.	597,863	19,929
Magnolia P. L. Co.	1,385,171	46,172
Empire P. L. Co.	1,821,333	60,711
Cosden P. L. Co.	832,711	27,757
Stanolind P. L. Co.*	2,835,000	94,500
Oklahoma P. L. Co.	2,206,399	73,547
Other lines*	5,880,000	196,000
Total September	19,907,520	663,584
Total August	20,759,207	669,651
Difference	851,687	6,067

Shipments

Prairie P. L. Co.†	4,246,592	141,553
Gulf P. L. Co.	1,208,894	40,296
Texas P. L. Co.	1,292,472	43,032
Magnolia P. L. Co.	1,535,669	51,189
Empire P. L. Co.	2,164,408	72,147
Cosden P. L. Co.	989,219	32,974
Stanolind P. L. Co.†	3,264,938	108,831
Oklahoma P. L. Co.	2,515,372	83,846
Other lines*	5,010,000	167,000
Total September	22,227,564	740,918
Total August	23,829,712	768,701
Difference	1,602,148	27,783

Stocks

Prairie O. & G. Co.*	37,050,000
Gulf P. L.-Gypsy Oil Co.	8,108,868
The Texas Company	4,130,059
Magnolia Petroleum Co.	5,821,224
Empire P. L. Co.	5,396,159
Mid-Continent Petroleum Corp.	3,705,319
Stanolind Crude Oil Pur. Co.*	20,300,000
Oklahoma P. L. Co.*	2,840,663
Carter Oil Co.	9,719,214
Other lines*	23,822,500
Total September	120,894,006
Total August	122,274,011
Difference	1,380,005

*Estimated. †Prairie and Sinclair shipments include Texas crude oil.

EASTERN PIPE LINE REPORT FOR MONTH OF SEPTEMBER

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky, Illinois, Indiana and Michigan for August and September:

	Aug.'30	Sept.'30
Nat. Transit	118,378.49	126,408.01
S. W. Pa. P. L.	70,719.58	76,584.80
Eureka P. L.	272,439.56	286,627.14
Buckeye P. L. (Macksb'g)	320,091.51	335,374.02
Buckeye P. L. (Cleve)	11,270.77	11,061.63
Buckeye P. L. (Lima, etc.)	91,699.80	93,502.50
Indiana P. L.	3,933.81	5,054.52
Cum'land P. L.	169,133.16	179,527.92
N. Y. Transit	25,399.13	39,583.19
Tidewater P. L.	26,087.89	25,675.10
Pure Oil	255,892.02	191,912.84
Stoll Oil Rfg	3,500.15	3,317.59
Bradford Tran.	314,490.88	322,922.56
Total	1,683,036.75	1,697,851.92
Daily avg.	54,291.51	56,595.07

Note—Indian Refining Co. had other receipts of 299,733.91 bbls.

Eastern Gulf Oil reported runs of 8,872.74 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for August and September:

	Aug.'30	Sept.'30
Nat. Transit	479,192.75	484,508.49
S. W. Pa. P. L.	280,390.24	256,281.87
Eureka P. L.	273,684.53	244,918.35
Buckeye P. L. (Macksb'g)	160,065.90	216,745.14
Buckeye P. L. (Cleve.)	1,712.66	1,712.02
Buckeye P. L. (Lima, etc.)	1,394,277.59	1,075,693.53
Indiana P. L.	1,235,995.03	1,128,187.83
Cum'land P. L.	205,045.71	136,895.24
Southern P. L.	69,211.54	66,892.64
N. Y. Transit	172,930.08	164,725.36
Northern P. L.	172,321.25	124,793.90
Tidewater P. L.	504,721.54	585,647.20
Pure Oil	107,492.59	183,063.50
Indian Ref.	375,829.22	373,510.38
Bradf'd Trans	381,474.90	425,829.96
Tuscarora Oil	503,354.86	360,569.02
Total	6,370,704.44	5,819,974.55
Daily avg.	205,506.59	193,999.15

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky and Indiana at the close of August and September:

	Aug.'30	Sept.'30
Nat. Transit	808,225.58	765,612.70
S. W. Pa. P. L.	490,266.60	542,827.03
Eureka P. L.	1,603,479.10	1,516,135.69
Buckeye P. L. (Macksb'g)	694,516.87	665,285.49
Buckeye P. L. (Cleve.)	66,315.01	66,500.27
Buckeye P. L. (Lima, etc.)	5,004,621.10	5,065,078.07
Indiana P. L.	836,606.05	759,036.08
Cum'ld P. L.	547,844.28	548,890.67
South'n P. L.	245,676.27	294,744.69
N. Y. Transit	144,696.68	139,813.32
North'n P. L.	416,121.94	480,715.71
Tidew'r P. L.	1,043,300.56	957,099.13
Pure Oil	507,198.43	520,059.95
Indian Ref.	161,817.52	88,060.62
Tuscarora	278,425.17	276,805.35
Brad Trans	197,440.63	125,354.37
Total	13,047,051.84	12,812,018.99
Decrease	221,511.00	235,032.85

Grades of Oil

The following table shows the amount of the different grades of oil held by the Eastern Pipe Lines at the close of August and September showing gross stocks of the above fields:

	Aug.'30	Sept.'30
Penna.	4,044,608.48	3,921,022.36
Lima	815,257.62	828,284.49
Kentucky	594,501.57	596,275.33
Mid-Cont.	7,051,195.35	6,946,872.38
Illinois	44,760.06	10,632.05
Michigan	496,728.56	508,932.40
Total	13,047,051.84	12,812,018.99

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1927	1928	1929	1930
Jan.	56,209	52,904	51,749	75,907
Feb.	61,298	57,002	51,833	79,256
Mar.	63,247	57,485	54,252	76,688
April	60,927	56,812	58,444	84,536
May	60,284	62,067	59,902	80,543
June	62,757	58,230	58,833	75,430
July	58,674	57,144	56,087	68,921
Aug.	60,870	57,745	56,087	54,291
Sept.	60,285	53,487	67,315	56,595
Oct.	147,080	58,100	76,093	.....
Nov.	57,275	52,365	74,831	.....
Dec.	53,089	52,025	74,561	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1927	1928	1929	1930
Jan.	141,227	146,465	165,721	217,623
Feb.	138,534	167,368	169,387	224,355
Mar.	133,777	158,883	161,474	228,846
April	140,227	172,935	169,737	241,845
May	144,594	180,559	184,281	248,353
June	149,772	188,024	185,404	234,401
July	151,850	189,470	194,763	207,094
Aug.	188,653	192,852	184,946	205,506
Sept.	144,213	194,138	201,214	193,999
Oct.	147,036	176,000	191,367	.....
Nov.	150,975	176,898	202,743	.....
Dec.	144,504	173,572	186,257	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1928	1929	1930
Jan.	12,276,710	7,596,564	12,220,045
Feb.	12,180,419	8,738,835	12,991,561
Mar.	12,239,725	9,002,058	13,247,217
April	11,740,125	8,978,172	13,233,961
May	11,602,468	8,903,560	13,052,953
June	11,287,678	8,921,275	13,396,855
July	10,819,331	9,211,595	13,268,562
Aug.	10,236,743	9,440,643	13,047,051
Sept.	9,660,910	9,443,067	12,812,018
Oct.	9,229,709	9,441,101	.....
Nov.	8,366,553	9,868,528	.....
Dec.	7,539,555	11,253,953	.....

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, Sept. 30	1,879,669.20
Runs from wells	431,326.01
Other receipts	147,343.64
Regular deliveries	346,016.53
Other deliveries	222,967.58

The amount of Illinois oil run by the Tidewater Pipe Co. in September was 25,675.10 bbls. Deliveries were 25,675.10 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1930	Runs	Deliveries
Sept.	457,001.11	371,691.63
1929		
Feb.	517,320.17	503,387.70
March	728,319.67	586,049.60
April	515,374.27	654,297.96
May	608,981.60	673,812.83
June	568,454.70	818,846.97
July	611,106.79	828,159.44
Aug.	625,851.99	746,425.06
Sept.	582,457.66	669,947.72
Oct.	622,302.83	558,558.60
Nov.	565,108.75	427,064.63
Dec.	548,924.41	489,368.81
1930		
Jan.	543,887.95	498,293.93
Feb.	548,416.38	414,586.59
March	631,944.49	469,119.53
April	530,074.22	509,304.80
May	605,147.37	504,069.84
June	572,662.57	468,658.81
July	604,529.34	388,454.47
August	594,642.12	375,742.43

Tidewater Pipe Co., Ltd., also delivered in September, 308,731.02 bbls. Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA CRUDE AND REFINED OIL AT ATLANTIC AND GULF PORTS

Average barrels per day in 1929-30—	Atlantic Ports: Baltimore	Boston	New York	Philadelphia	Others	Total	Gulf Coast Ports: Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
September	19,433	.....	31,834	11,900	4,200	69,367	.....	.....	.....	.....	4,800	74,167
October	9,065	4,677	42,065	13,000	9,677	77,484	.....	.....	.....	.....	4,097	81,581
November	13,900	3,167	41,667	14,699	8,767	82,200	.....	.....	.....	.....	2,400	84,600
December	12,968	.....	46,129	13,613	7,225	79,935	.....	.....	.....	.....	2,335	82,290
January	12,484	1,936	34,257	22,333	9,516	80,516	.....	.....	.....	.....	2,258	82,774
February	7,678	.....	34,714	14,321	5,000	61,714	.....	.....	.....	.....	2,607	64,321
March	10,548	3,065	28,871	5,774	23,484	71,742	.....	.....	.....	.....	806	74,548
April	7,767	.....	14,369	11,600	7,433	41,167	.....	.....	.....	.....	7,600	48,767
May	5,194	6,451	28,161	9,484	3,774	54,064	.....	.....	.....	.....	774	54,838
June	8,300	.....	33,933	20,767	2,333	65,333	.....	.....	.....	.....	3,400	67,731
July	17,355	7,774	43,419	23,339	6,452	98,339	.....	.....	.....	.....	4,845	103,484
August	7,418	8,742	38,968	21,226	5,258	81,613	.....	.....	.....	.....	97	81,710

AVERAGE DAILY IMPORTS OF CRUDE AND REFINED OIL AT PRINCIPAL UNITED STATES PORTS

Average barrels per day in 1929-30—	Atlantic Ports: Baltimore	Boston	New York	Philadelphia	Others	Total	Gulf Coast Ports: Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
September	32,967	9,000	136,633	54,300	32,900	265,800	6,900	22,900	5,267	1,333	36,500	302,300
October	39,936	10,619	137,096	38,160	38,644	264,355	6,613	13,333	11,064	4,419	35,484	299,839
November	23,633	18,900	125,200	41,100	28,200	237,033	2,333	12,533	6,667	2,500	23,933	260,966
December	29,774	15,387	133,742	31,000	23,775	253,678	5,548	16,484	6,613	1,774	30,419	284,097
January	21,161	10,678	134,581	33,677	43,806	243,903	4,322	6,453	.....	548	11,323	260,226
February	24,500	14,714	147,357	36,036	39,786	262,933	2,821	11,072	3,500	1,964	19,357	281,750
March	28,355	3,839	151,806	36,645	34,903	255,548	4,323	11,645	839	2,419	19,226	274,774
April	31,400	8,933	133,500	40,433	19,434	233,700	.....	7,400	2,433	4,167	14,000	247,700
May	24,139	9,323	174,194	39,291	28,236	275,161	8,194	11,548	2,935	1,323	24,000	299,161
June	51,533	15,667	121,067	45,033	25,033	258,333	4,413	17,367	3,167	1,333	26,300	282,663
July	42,097	9,548	154,968	37,935	34,033	280,580	6,678	9,161	2,097	2,387	19,323	299,903
August	29,933	4,484	145,613	33,355	35,097	247,581	8,419	9,323	3,548	3,000	29,290	276,871

GROSS PRODUCTION OF CRUDE OIL IN THE UNITED STATES FOR 12 MONTHS

(In Barrels of 42 Gallons)

1929-30—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
October:	Month	26,896,160	20,821,646	26,412,167	3,429,468	2,000,027	1,956,326	2,392,952	4,482,000	88,389,746
	Daily average	867,586	671,666	852,004	110,628	64,517	63,107	77,192	141,358	2,851,282
November:	Month	21,317,540	19,193,760	24,896,034	3,430,560	1,911,060	1,853,565	2,350,110	4,029,000	78,981,629
	Daily average	710,585	639,798	829,868	114,352	63,702	61,785	78,337	134,300	2,632,720
December:	Month	21,705,554	20,092,876	25,609,823	3,549,066	1,917,071	1,878,352	2,378,754	4,168,100	81,299,596
	Daily average	700,179	648,156	818,394	114,486	61,841	60,592	76,734	134,455	2,622,568
January:	Month	21,983,242	20,802,984	25,284,352	3,273,197	1,817,685	1,780,969	2,151,090	4,216,000	81,309,519
	Daily average	709,137	671,064	815,624	105,587	58,635	57,451	69,390	136,000	2,622,884
February:	Month	20,885,860	17,977,624	23,314,637	2,965,704	1,608,376	1,738,425	2,027,984	3,780,000	74,298,410
	Daily average	745,916	642,058	832,665	105,918	57,442	62,087	72,429	135,000	2,653,517
March:	Month	19,699,979	19,112,306	25,503,880	3,504,395	1,817,871	1,943,092	2,337,028	4,231,500	78,149,252
	Daily average	635,483	616,526	822,679	113,045	58,641	62,680	75,388	136,500	2,520,942
April:	Month	18,768,743	19,541,310	24,799,768	3,734,253	1,724,460	1,909,552	2,334,810	4,134,000	76,946,896
	Daily average	625,625	651,377	826,658	124,475	57,482	63,652	77,827	137,800	2,564,897
May:	Month	19,044,444	20,587,593	26,214,068	3,978,385	1,659,895	1,914,290	2,565,219	4,402,000	80,365,804
	Daily average	614,337	664,113	845,615	128,335	53,545	61,751	82,749	142,000	2,593,445
June:	Month	18,020,795	19,754,900	25,643,705	3,765,060	1,704,060	1,923,621	2,519,190	3,880,000	77,211,331
	Daily average	666,693	658,490	854,791	125,502	56,802	64,187	83,973	129,300	2,573,711
July:	Month	18,802,034	18,932,514	25,910,929	3,541,409	1,713,680	2,079,769	3,275,894	3,844,000	77,200,219
	Daily average	606,517	581,594	835,385	114,239	55,280	67,089	105,674	124,000	2,490,328
August:	Month	18,770,466	17,256,034	25,558,513	3,491,530	1,700,102	2,151,120	3,193,341	3,417,000	75,517,106
	Daily average	605,499	556,614	824,823	112,630	54,842	69,391	103,011	110,226	2,436,036
September:	Month	17,984,306	16,509,120	23,640,726	3,408,510	1,583,280	2,008,060	3,239,019	3,396,000	71,766,013
	Daily average	599,477	550,304	788,023	113,617	52,776	66,935	107,967	113,200	2,392,199
	Total 12 months	243,877,913	229,681,577	302,768,101	42,068,537	21,157,627	23,137,142	30,765,382	47,979,600	941,435,529